SERVICE MANUAL

P270WM/P270WM3

notebook

Notebook Computer

P270WM/P270WM3

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the ***P270WM/ P270WM3*** series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists
Appendix B, Schematic Diagrams

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

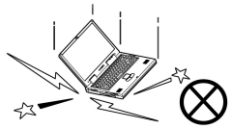
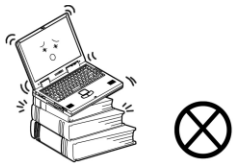
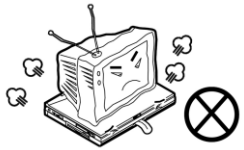
1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit (Full Range AC/DC Adapter – AC Input 100 - 240V, 50 - 60Hz, DC Output 20V, 15A (300W) minimum).

This Computer's Optical Device is a Laser Class 1 Product

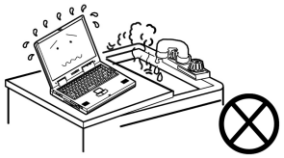
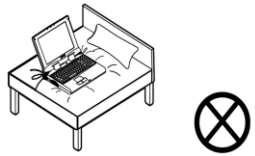
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

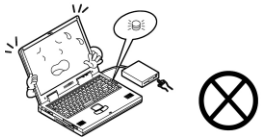
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

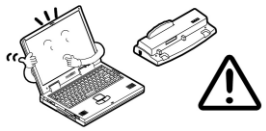
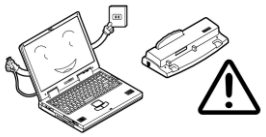
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

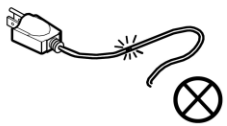
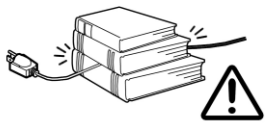
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

System Startup

1. Remove all packing materials, and place the computer on a stable surface.
2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
3. Attach the AC/DC adapter to the DC-In jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
4. Use one hand to raise the lid/LCD to a comfortable viewing angle (it is preferable not to exceed 135 degrees); use the other hand to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
5. Raise the lid/LCD to a comfortable viewing angle, and press the power button.

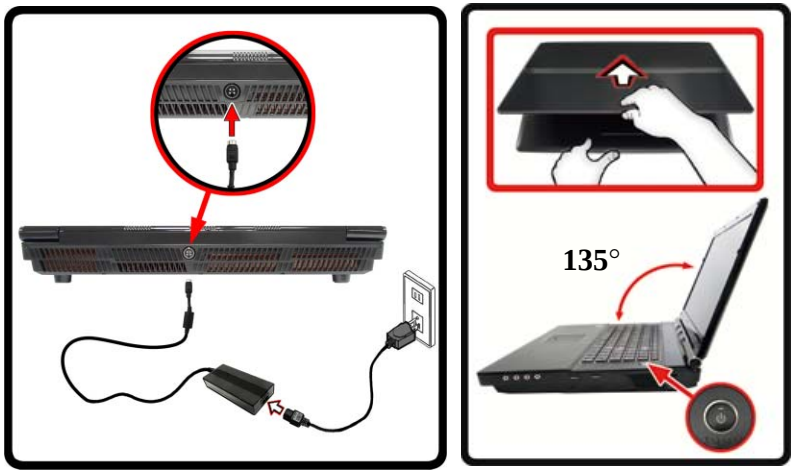


Figure 1
Computer with AC/DC Adapter Plugged-In / Opening the Lid/LCD

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***P270WM/P270WM3*** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows 7*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The ***P270WM/P270WM3*** series notebook is designed to be upgradeable. See ***Disassembly on page 2 - 1*** for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the " " symbol.

The balance of this chapter reviews the computer's technical specifications and features.

System Specifications

Processor
Intel® Core i7-3960X (3.30GHz) 15MB L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 130W **Intel® Core i7-3820X (3.20GHz)** 12MB L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 130W **Intel® Core i7-3930X (3.20GHz)** 12MB L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 130W
Core Logic
Intel® X79 Express Chipset
Display
17.3" (46.94cm) FHD (1920 * 1080) 16:9 Backlit Panel For **P270WM3** with 3D Support Built-in 3D IR Emitter One nVIDIA® 3D Vision™ 2 Shutter Glasses Kit
Memory
Four Channel **DDRIII (DDR3)** Four 204 Pin SO-DIMM Sockets Supporting **DDRIII (DDR3) 1333/1600** MHz Memory Modules (real operational frequency depends on the FSB of the processor) Memory Expandable up to 16GB Compatible with 2GB or 4GB Modules

Video Adapter
nVIDIA® GeForce GTX 580M PCIe * 16 Video Card 2GB GDDR5 Video RAM On Board Supports Microsoft DirectX® 11.0 MXM3.0 Type B Supports DisplayPort 1.1a nVIDIA PhysX™ GeForce CUDA™ Technology Supports nVIDIA® SLI Technology ========== For **P270WM3** with 3D Support Supports 3DTV Play™ ==========
For P270WM Only: nVIDIA® Quadro 5010M PCIe * 16 Video Card 4GB GDDR5 Video RAM On Board Supports Microsoft DirectX® 11.0 MXM3.0 Type B Supports DisplayPort 1.1a nVIDIA PhysX™ GeForce CUDA™ Technology Supports OpenGL 4.1
BIOS
One 64Mb SPI Flash ROM AMI BIOS

Storage
Up to three (**Factory Option**) Changeable 2.5" 9.5 mm (h) **SATA** (Serial) Hard Disk Drives supporting RAID level 0/1/5 One 12.7 mm Super Multi/Blu-Ray Combo/ Blu-Ray Writer SATA Optical Device Drive (**Factory Option**)
Audio
High Definition Audio S/PDIF Digital Output Built-In Microphone 5 Built-In Speakers One built-in 3W Sub woofer THX® TruStudio Pro Surround Sound External 7.1CH Audio output supported by headphone, microphone, S/PDIF & Line-In Jack
Keyboard & Pointing Device
Full Size Winkey Illuminated Keyboard with Numeric Keypad Built-In TouchPad (with Multi Gesture Functionality) Six Touch Sensor Instant Keys (Volume Up, Volume Down, Mute, WLAN, Bluetooth & PC Camera) W/A/S/D Gaming Keys

Card Reader
Embedded Multi-In-1 Card Reader - MMC / RSMMC - SD / Mini SD / SDHC / SDXC - MS / MS Pro / MS Duo **Note:** Some of these cards require PC adapters that are usually supplied with the cards.
Slots
One ExpressCard™ (34/54) Slot One Mini Card Slot for WLAN & Bluetooth Combo Half Mini-Card Module with PCIe & USB Interface
Interface
Three USB 3.0 Ports (Including one AC/DC Powered USB/ eSATA Combo Port) Two USB 2.0 Ports One eSATA Port (SATA Interface, C/DC Powered USB 3.0 Combo) One Mini-IEEE1394b Port One DisplayPort (Version is Video Controller Dependant) One DVI-I Out Port (Single Link) One HDMI (High-Definition Multimedia Interface) 1.4a Out Port (with HDCP Support) One Headphone/Speaker-Out Jack One Microphone-In Jack One S/PDIF Out Jack One Line-In Jack One RJ-45 LAN Jack One DC-In Jack

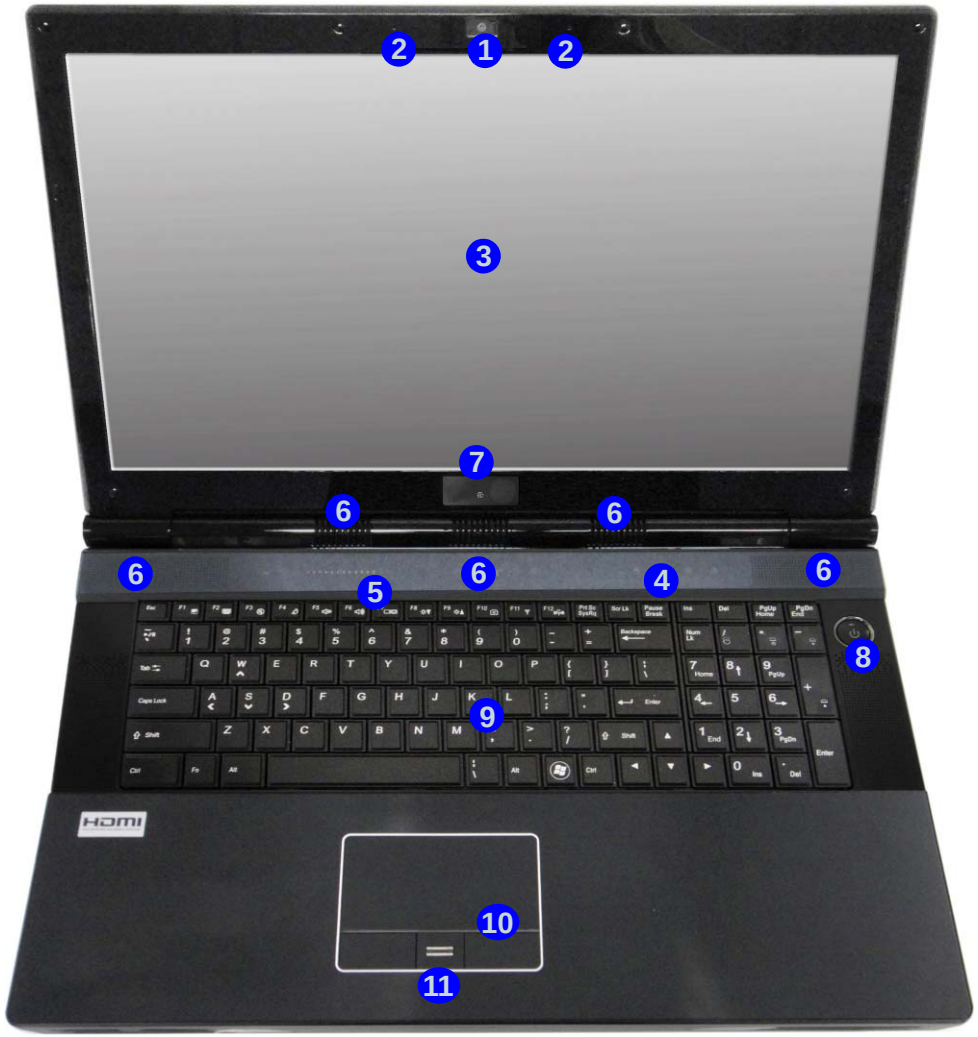
Communication
Built-In 10/100/1000 Base-TX Ethernet LAN **Intel® Centrino® Ultimate-N 6300** 3*3 (802.11 a/g/n) Half Mini-Card PCIe WLAN Module (**Factory Option**) **Intel® Centrino® Advanced-N 6230** 2*2 (802.11 a/g/n) Half Mini-Card PCIe WLAN + Bluetooth V3.0+HS Combo Module (**Factory Option**) **802.11b/g/n Wireless LAN** Half Mini-Card Module (**Factory Option**) **Combo WLAN** (802.11b/g/n) **and Bluetooth v3.0** Half Mini-Card Module (**Factory Option**) **Bluetooth 2.1** + EDR (Enhanced Data Rate) Module (**Factory Option**) 2.0M Pixel FHD PC Video Camera Module (**Factory Option**) 2.0M Pixel PC Video Camera Module (**Factory Option**)
Security
Security (Kensington® Type) Lock Slot BIOS Password Fingerprint Reader Module Trusted Platform Module 1.2
Operating System
Windows® 7 with Service Pack 1
Design Feature
Alloy Plate

Power Management
Supports Wake on LAN Supports Wake on USB
Power
Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 20V, 15A (**300 Watts**) Removable Polymer Smart Li-Ion 78.44WH Battery Pack Power Converter Box (**Factory Option**)
Environmental Spec
Temperature Operating: 10°C - 35°C Non-Operating: -20°C - 60°C Relative Humidity Operating: 20% - 80% Non-Operating: 10% - 90%
Physical Dimensions & Weight
419mm (w) * 286mm (d) * 57.9mm - 62.1mm (h) 5.5kg with Single VGA Card, Battery and ODD

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. Built-In PC Camera
2. Built-In Microphone
3. LCD
4. LED Status Indicators
5. Touch Sensor Instant Keys
6. Speakers
7. 3D IR Emitter (**P270WM3** Only)
8. Power Button
9. Keyboard
10. TouchPad and Buttons
11. Fingerprint Reader Module



External Locator - Front & Right side Views

Figure 2
Front Views

1. LED Power Indicators
2. Express Card Slot
3. Multi-In-1 Card Reader

Figure 3
Right Side Views

1. Line-In Jack
2. S/PDIF-Out Jack
3. Microphone-In Jack
4. Headphone-Out Jack
5. 2 * USB 2.0 Ports
6. Sub Woofer
7. Security Lock Slot

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DVI-Out Port
2. RJ-45 LAN Jack
3. HDMI-Out Port
4. Display Port
5. 2 * USB 3.0 Ports
6. Combined eSATA/ Powered USB 3.0 Port
7. Mini-IEEE 1394b Port
8. Optical Device Drive Bay

Figure 5
Rear View

1. DC-In Jack

External Locator - Bottom View

Figure 6
Bottom View

1. Fan Outlet/Intake
2. Component Bay Cover
3. Battery
4. HDD Bay

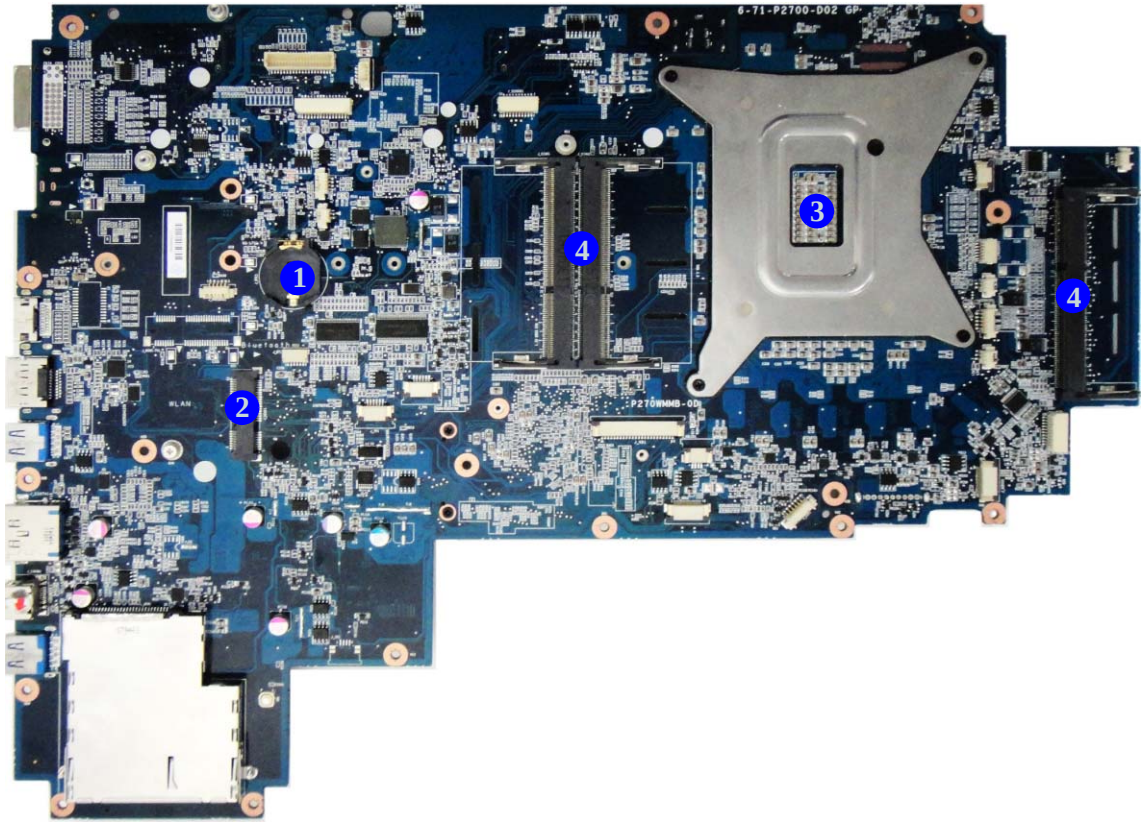
Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Mainboard Overview - Top (Key Parts)

Figure 7
Mainboard Top Key Parts

1. CMOS Battery
2. Mini-Card Connector (WLAN Module)
3. SandyBridge Controller
4. Memory Slots DDR3 So-DIMM



Mainboard Overview - Bottom (Key Parts)

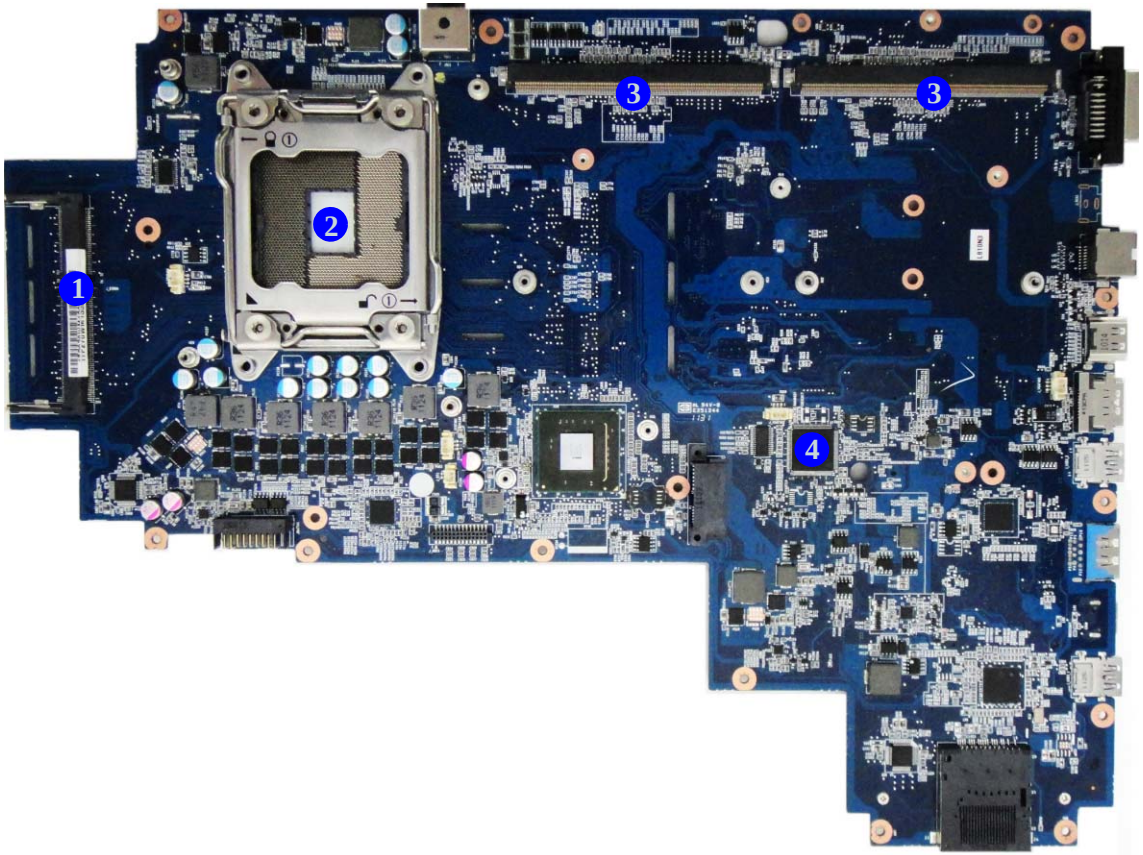


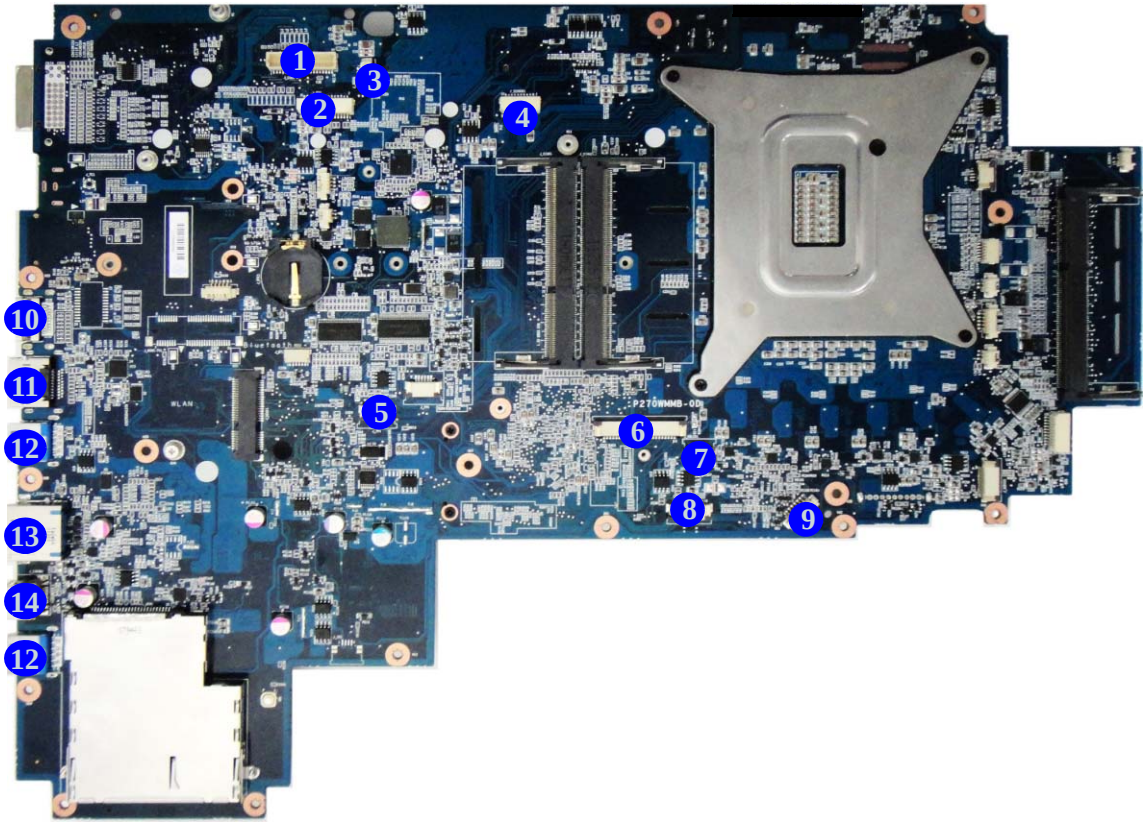
Figure 8
Mainboard Bottom Key Parts

1. Memory Slots DDR3 So-DIMM
2. CPU Socket
3. VGA Sockets
4. Audio Codec ALC892

Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

1. LCD Cable Connector
2. LCD 3D Cable Connector
3. 3D Emitter Cable Connector
4. JMIC
5. JSpeaker
6. Keyboard Cable Connector
7. Keyboard LED Cable Connector
8. HDD Connector
9. LED Connector
10. HDMI-Out Port
11. Display Port
12. USB 3.0 Ports
13. eSATA/Powered USB 3.0 Port
14. Mini-IEEE 1394 Port



Mainboard Overview - Bottom (Connectors)

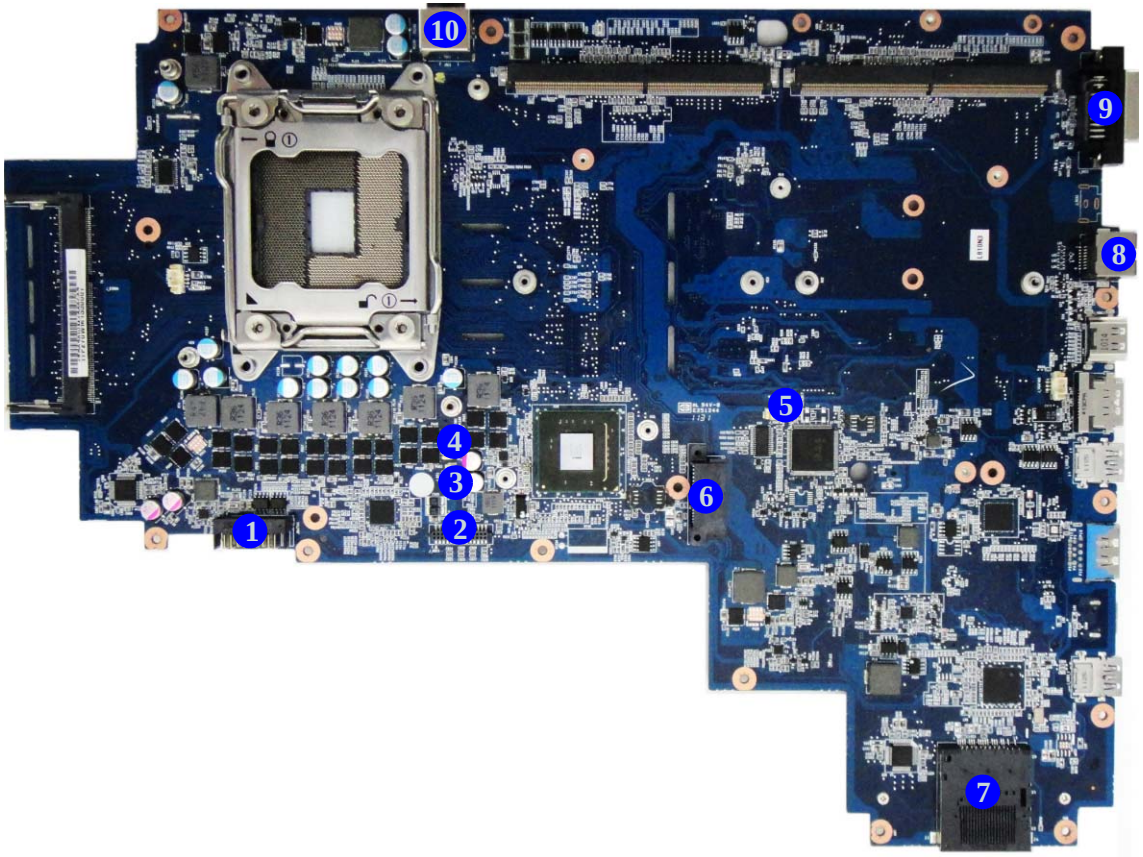


Figure 10
Mainboard Bottom Connectors

1. Battery Connector
2. HDD Connectors
3. Thermal Sensor Connector
4. CPU Fan Connector
5. VGA Fan
6. ODD Connector
7. Multi-in-1 Card Reader
8. RJ-45 LAN Jack
9. DVI Port
10. DC-In Jack

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***P270WM/P270WM3*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

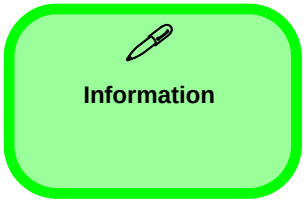
We suggest you completely review any procedure before you take the computer apart.

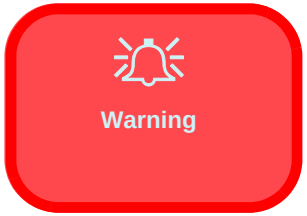
Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a lists the relevant parts you will have after the disassembly process is complete. **Note**: The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a will also provide any possible helpful information. A box with a contains warnings.

An example of these types of boxes are shown in the sidebar.





NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it**. Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it**. Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference**. Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry**. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power**. Avoid accidental shocks, discharges or explosions.
   - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
   - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge**. ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components**. When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery *page 2 - 5*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 6*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the System Memory *page 2 - 10*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the System Memory *page 2 - 12*

To remove and install the Processor:

1. Remove the battery *page 2 - 5*
2. Remove the Processor *page 2 - 16*
3. Install the Processor *page 2 - 18*

To remove the VGA card:

1. Remove the battery *page 2 - 5*
2. Remove the VGA card *page 2 - 19*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the Keyboard *page 2 - 10*
3. Remove the Wireless LAN *page 2 - 22*

Removing the Battery

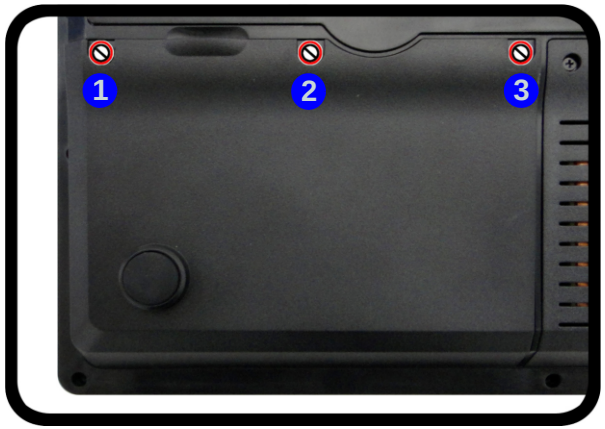
If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer off, remove the AC/DC adapter and turn it over.
2. Loosen screws 1 - 3 and carefully lift the battery 4 up.
3. Lift the battery 4 up (***Figure b***) and out of the battery bay.

Figure 1
Battery Removal

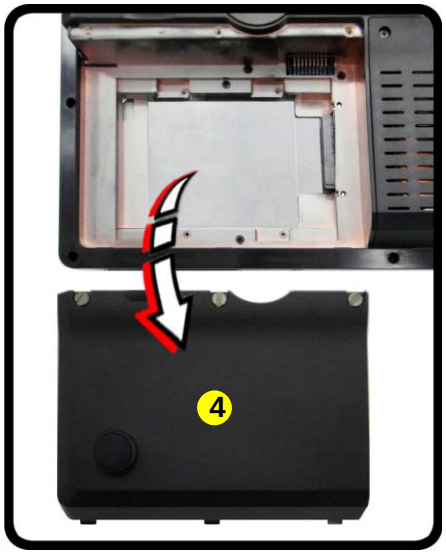
a. Loosen the screws.
b. Release the battery.
c. Lift the battery out of the bay as indicated.

a.



b.

c.



4. Battery

- 3 Screws

Figure 2
Optical Device Removal

a. Remove the screws.
b. Remove the cover.
c. Remove the screw.
d. Push the optical device out of the computer.

Removing the Optical (CD/DVD) Device

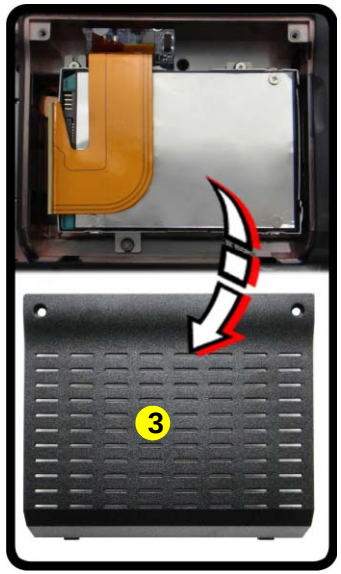
1. Turn off the computer, and turn it over and remove the battery (*page 2 - 5*).
2. Locate the hard disk bay cover and remove screws 1 - 2, and remove the bay cover 3.
3. Remove the screw at point 4, and use a screwdriver to carefully push out the optical device at point 5.
4. Push the optical device drive 6 out of the bay and reverse the process to install the new device.

a.

c.

d.

b.



3. Hard Disk Bay Cover
6. Optical Device

- 3 Screws

Blu-Ray Device Bezel Removal

Note that some Blu-Ray modules (e.g. Pioneer) have a small piece of mylar inserted in the left side (as viewed front on) of the bezel cover; in order to prevent the bezel cover of the module from being removed accidentally. If you need to replace the bezel cover, you will need to use a screwdriver to ease out and remove the mylar before attempting to remove the bezel cover. You will need to re-insert the mylar when replacing the bezel cover.

Removing the Hard Disk Drive

The hard disk drive is mounted in a removable case and can be taken out to accommodate other 2.5" SATA hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn off the computer, and turn it over and remove the battery (*page 2 - 5*).
2. Locate the Hard disk bay cover and remove screws 1 & 2.
3. Remove the bay cover 3.

a.

b.

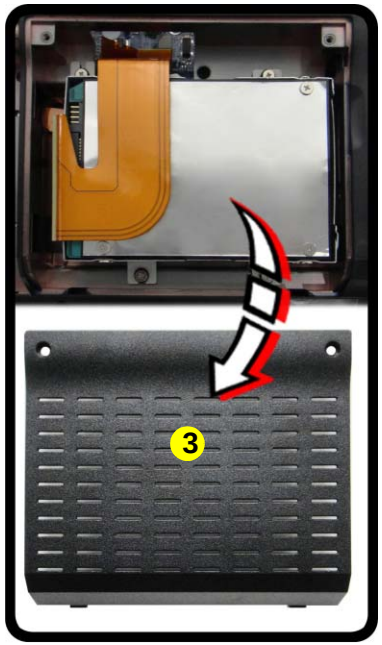


Figure 3
HDD Assembly Removal

a. Remove the screws.
b. Remove the cover

4. Hard disk Bay Cover

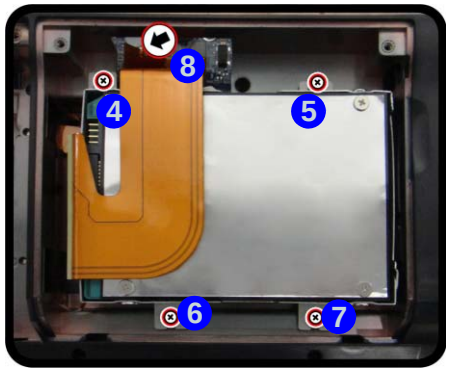
- 3 Screws

Figure 4
HDD Assembly Removal (cont'd.)

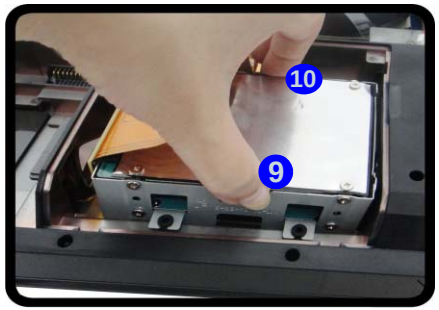
c. Remove the screws.
d. Lift the hard disk assembly using two hands at points 9 - 10.
e. Lift the hard disk assembly up out off the computer.
f. Remove the HDD(s) from the connector
g. Remove the screws and separate the HDD(s) from case.

4. Remove screws 4 - 7 and pull the tab to disconnect the connector 8 from hard disk assembly.
5. Carefully lift the hard disk assembly using two hands at points 9 - 10.
6. Lift the hard disk assembly 11 out of the computer.
7. Separate the hard disk board connector 12 from the hard disk assembly.
8. Remove screws 12 - 23 (depending on how many hard disks you have installed in the assembly).
9. Separate the hard disk(s) 25 and hard disk mylar 26 from the case 27 .
10. Reverse the process to install a new hard disk(s) and **make sure to connect cable** 8 before screwing in screws 4 - 7 (***Figure c***).

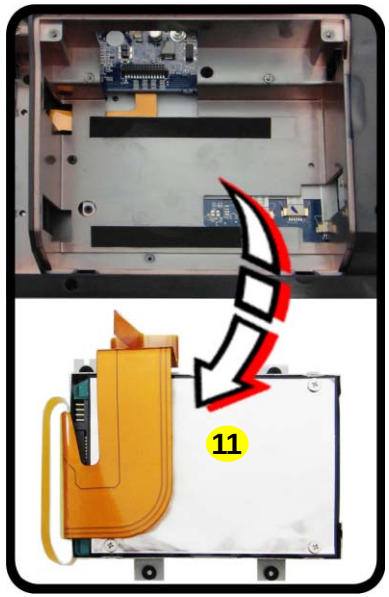
c.



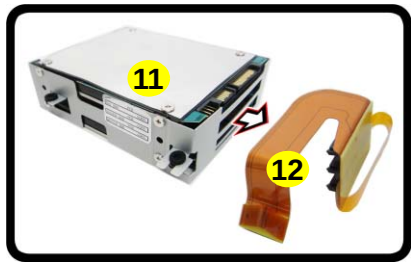
d.



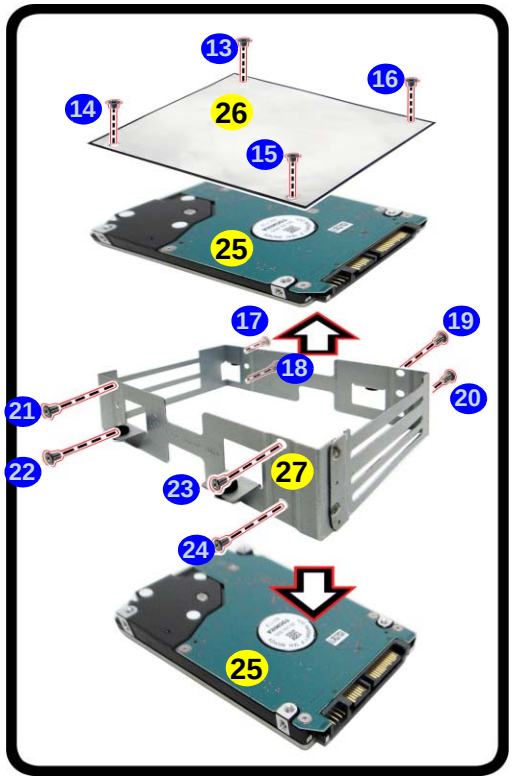
e.



f.



g.



11 Hard Disk Assembly
12 Hard Disk Board Connector
25. Hard Disks
26. Hard Disk Mylar
27. Hard Disk Case

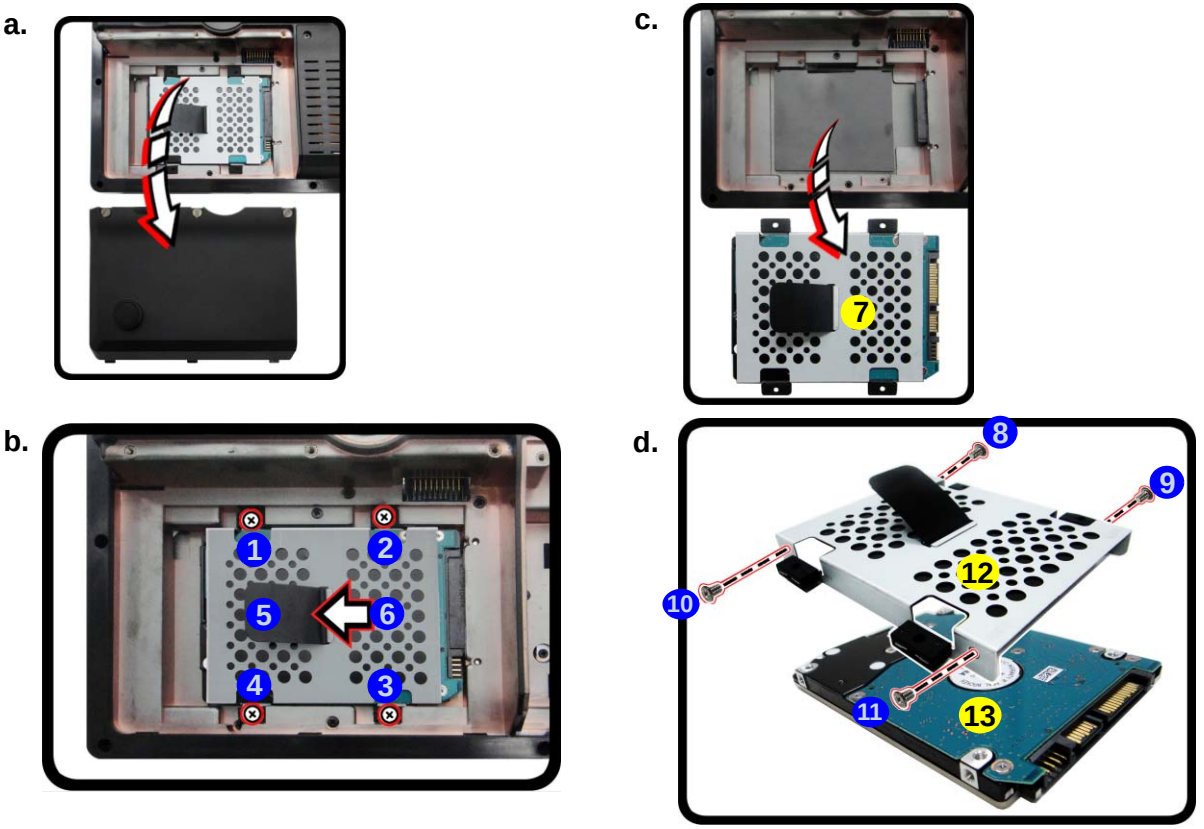
- 16 Screws

Removing the Hard Disk(s) in the Secondary HDD Bay

1. Turn **off** the computer, and turn it over and remove the battery.
2. The secondary hard disk bay is located under the battery.
3. Remove screws 1 - 4 from the secondary hard disk assembly.
4. Grip the tab 5 and slide the hard disk assembly in the direction of the arrow 6.
5. Lift the hard disk assembly 7 out of the compartment.
6. Remove the screws 8 - 11 to release the hard disk 12 from the case 13 .
7. Reverse the process to install any new hard disk(s).

Figure 5
Secondary HDD Assembly Removal

a. Remove the battery.
b. Remove the screws and slide the secondary hard disk assembly in the direction of the arrow.
c. Lift the secondary hard disk assembly out off the computer.
d. Remove the screws to release the hard disk from the case.



7. Hard Disk Assembly
12. Hard Disk Case
13. Hard Disks

- 8 Screws

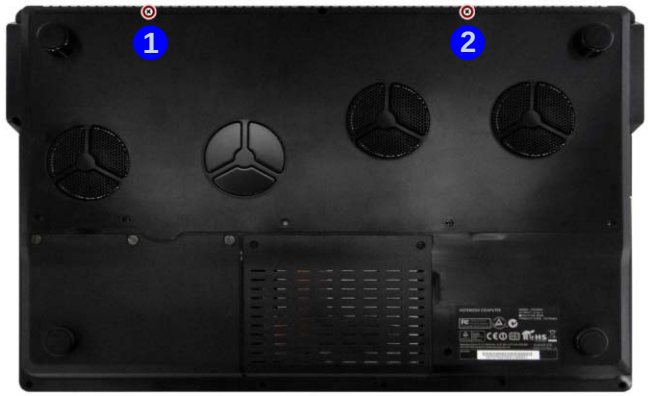
Figure 6
Keyboard Removal

a. Remove the screws from the bottom of the computer.
b. Turn the computer over, open the lid/LCD and unsnap the LED cover at point 3.
c. Lift the LED cover module and disconnect the cable.
d. Remove the screws from the keyboard.

Removing the Keyboard

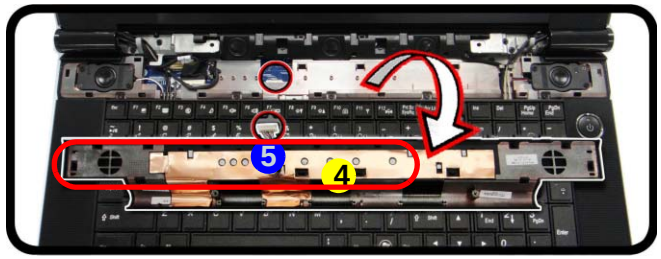
1. Turn off the computer, and turn it over and remove the battery (***page 2 - 5***).
2. Remove screws 1 & 2 from the bottom of the computer.
3. Turn the computer over, open the Lid/LCD, and carefully (a cable is connected to the underside of the LED cover module) unsnap up the LED cover module 4 from point 3 on the right.
4. Lift up the LED cover module 4 and disconnect the cable 5.
5. Remove screws 6 - 10 from the keyboard.

a.



b.

c.



d.

4. LED cover module

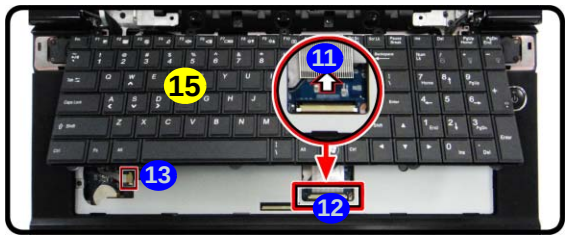
- 7 Screws

6. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable.
7. Disconnect the keyboard ribbon cable 11 from the locking collar socket 12, and the keyboard LED cable 13 from its locking collar socket 14.
8. Remove the keyboard 15 , and screws 16 - 18 from the keyboard shielding plate.

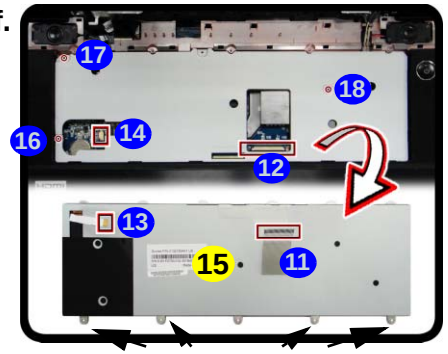
Figure 7
Keyboard Removal (cont'd.)

e. Disconnect the cable from the locking collar.
f. Remove the keyboard.
g. Snap down the LED cover.
h. Push the LED cover on the left side at point 17 and the slide toward the right to secure it in place.

e.



f.



Keyboard Tabs

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **five** keyboard tabs at the bottom (*Figure 7f*) at the bottom of the keyboard with the slots in the case.

9. Reverse the process to replace the keyboard (make sure to reconnect the keyboard cable).
10. Snap the LED cover module down 19 at the top fo the module at point 20 & 21.
11. Push the LED cover module down on the left side at point 22, and then slide the module to the right (as illustrated) and snap down to secure it in place.
12. Replace the screws on the bottom of the computer.

g.

h.

15. Keyboard
19. LED cover module

- 3 Screws

Figure 8
RAM-1 Module Removal

a. Remove the keyboard shielding plate.
b. Pull the release latch.
c. Remove the module(s).

Removing the System Memory (RAM) -1

The computer has three memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) DDR III (DDR3) supporting 1333/1600 MHz. The main memory can be expanded up to 16GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

Removing the Primary System Memory (2 memory sockets)

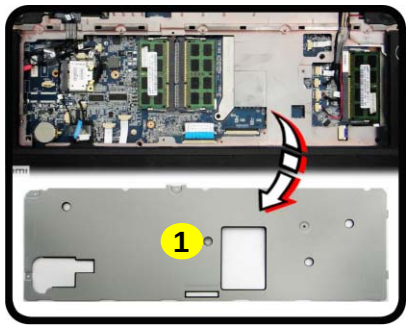
1. Turn off the computer, and turn it over and remove the battery (***page 2 - 5***), and keyboard (***page 2 - 10***).
2. Remove the keyboard shielding plate 1 (***Figure 8a***).
3. Gently pull the two release latches (2 & 3) on the sides of the memory socket in the direction indicated by the arrows (***Figure 8b***).
4. The RAM module 4 will pop-up (***Figure 8c***), and you can then remove it.

Contact Warning

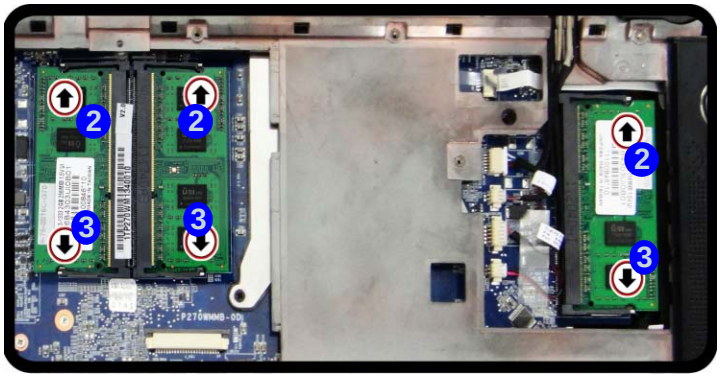
Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

1. Keyboard Shielding Plate
4. RAM Module(s)

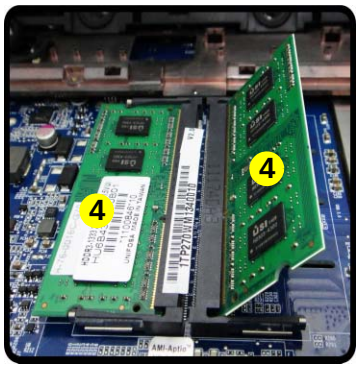
a.



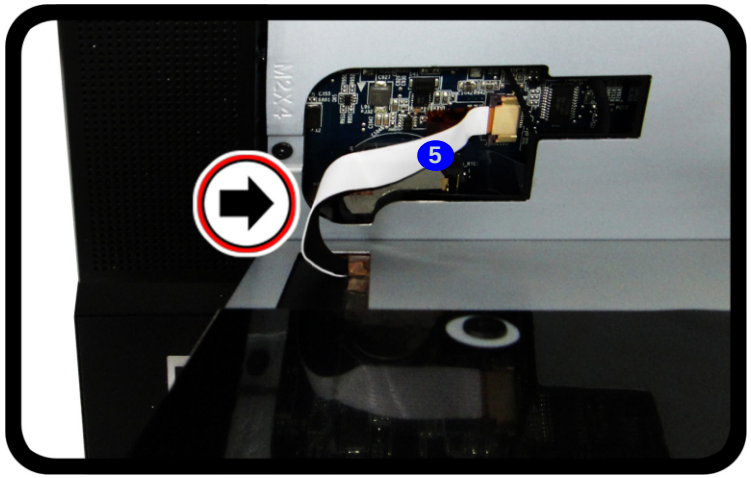
b.



c.



5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. DO NOT FORCE the module; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the screws and shielding plate.
10. Replace the keyboard and make sure you reconnect the keyboard cable.
11. When reconnecting the keyboard LED cable 5, twist the cable slightly so that the gold colored contact is facing upwards to fit inside the connector. Make sure you tuck the cable into the recess in the shield plate to avoid trapping it between the keyboard and the shielding plate.



12. Reconnect the LED module cable and reinstall the LEd cover module (see *Figure 7 on page 2 - 11*).
13. Replace the screws on the bottom of the computer.
14. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Figure 9
RAM-2 Module Removal

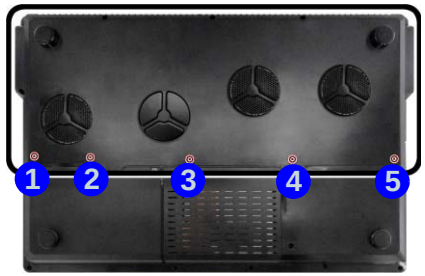
a. Remove screws and component bay cover.
b. Disconnect the cables and remove the screws.
c Remove the heatsink.

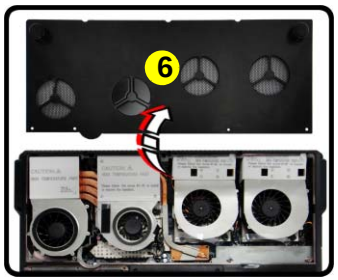
Removing the System Memory (RAM) - 2

Memory Upgrade Process

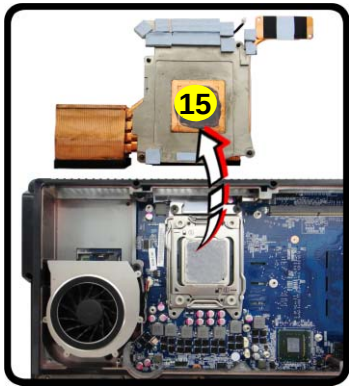
1. Turn off the computer, and turn it over and remove the battery (***page 2 - 5***) and remove the keyboard (***page 2 - 5***).
2. Remove screws 1 - 5 and component bay cover 6.
3. Carefully disconnect CPU fan cables 7 & 8, and remove screws 9 - 14 in the reverse order to that indicated on the label (i.e. remove screw 9 first, and lastly remove screw 14) and carefully pull the tab to disconnect the heat sink.
4. Carefully (it may be hot) lift up the heatsink 15 off the computer.

a.

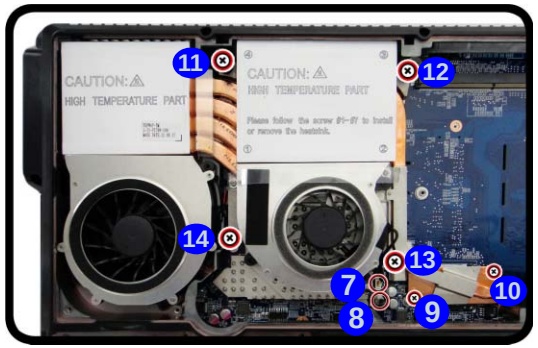




c.



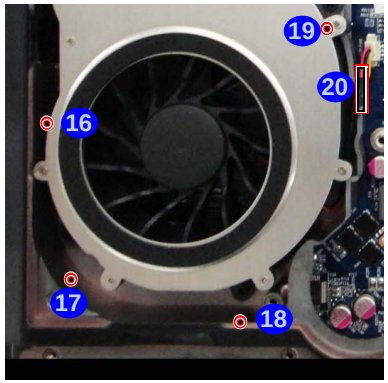
b.



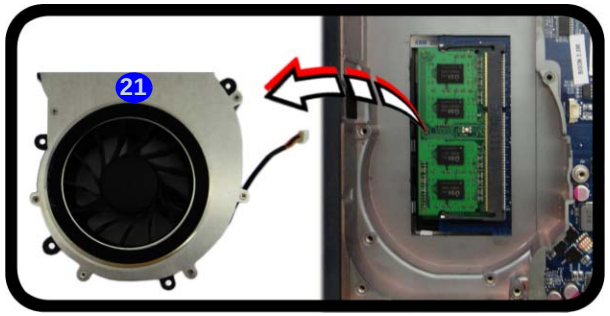
6. Component Bay Cover
15. Heatsink

- 11 Screws

5. Remove screws 16 - 19 from the fan unit, disconnect the fan cable 20, and lift the fan unit 21 off the computer (*Figure 10d*).
6. Gently pull the two ***release latches 22 & 23 on the sides of the memory socket in the direction indicated by the arrows*** (*Figure 10e*).
7. The RAM module 24 will pop-up, and you can then remove it.



d.



e.

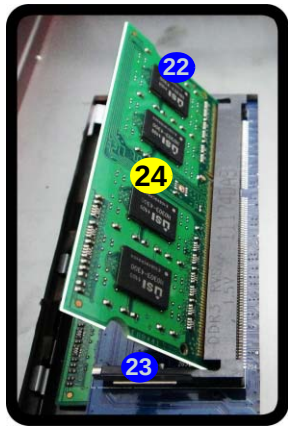


Figure 10
RAM-2 Module Removal (cont'd.)

d. Remove screws and lift the fan unit.
e. Pull the release latch and remove the module.

8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. DO NOT FORCE the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the fan unit above the RAM module slot and replace screws 16 - 19, then reconnect the cable 20 (*Figure 10d*).
12. Insert the heatsink 15 (make sure not to trap or catch the plastic VGA heat sink tab under the CPU heat sink when inserting it) (*Figure 9c*).
13. Tighten the CPU heat sink screws 9 - 14 in the order indicated on the label (i.e. tighten screw 14 first, and lastly tighten screw 9) and reconnect the CPU fan cables 7 & 8 (*Figure 9b*).
14. Replace the component bay cover and screws.
15. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

21. Fan Unit
24. RAM Module

- 11 Screws

Figure 11
Processor Removal

a. Locate the heat sink.
b. Remove the CPU fan cables and screws.
c. Remove the heat sink

Removing and Installing the Processor

Processor Removal Procedure

1. Turn off the computer, and turn it over, remove the battery (***page 2 - 5***), and component bay cover (***page 2 - 10***).
2. The CPU heat sink will be visible at point A on the mainboard.
3. Carefully disconnect CPU fan cables B - C, and remove screws 6, 5, 4, 3, 2, 1 , the reverse order indicated on the label (***Figure 11b***) and carefully pull the tabs 7 - 8 to disconnect the heat sink.
4. Carefully (it may be hot) lift up the heat sink 9 off the computer.

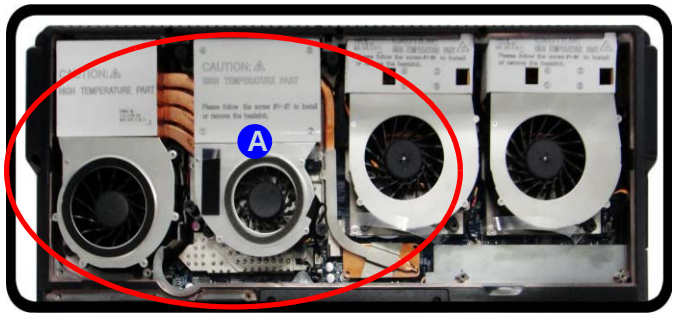
Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

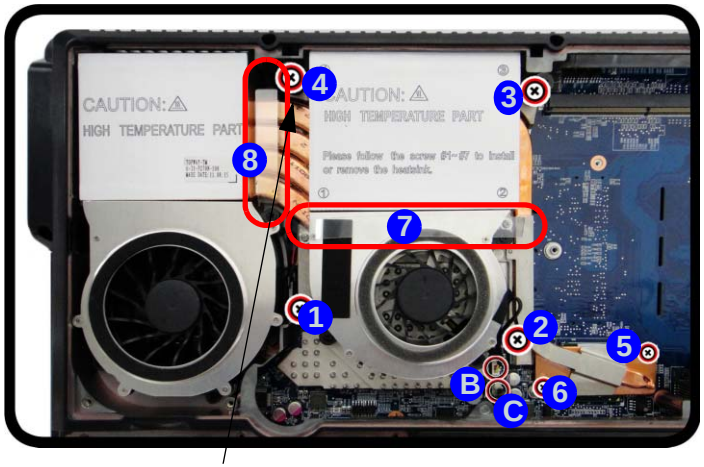
9. CPU Heat Sink

- 6 Screws

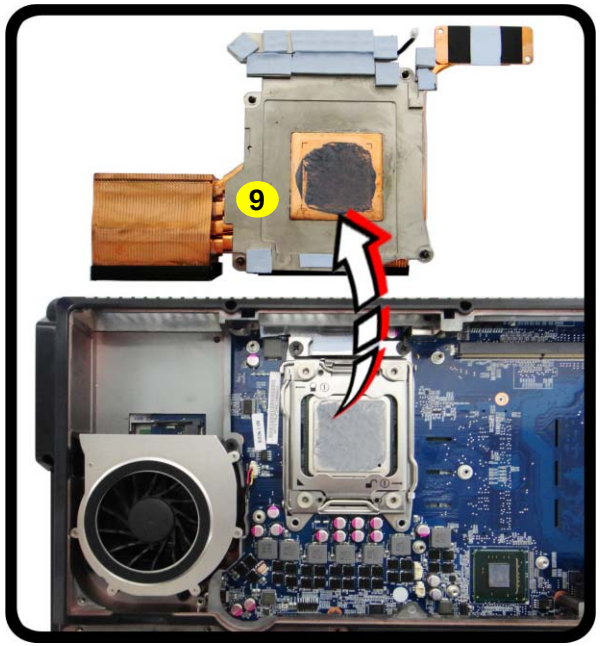
a.



b.



c.



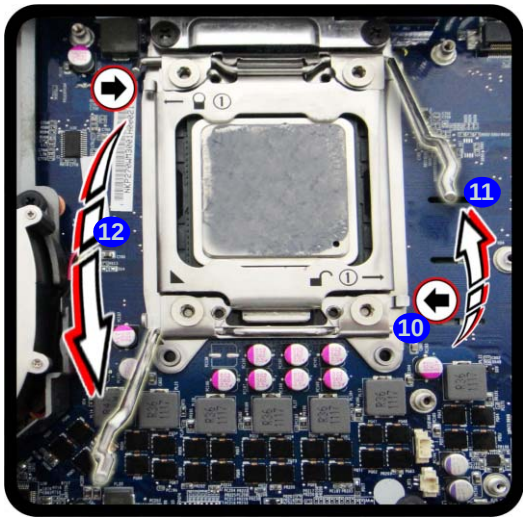
Note: make sure not to trap or catch the plastic heat sink tab 8 while removing or tighting the srew 4.

5. Press down and hold the latch 10 (with the latch held down you will be able to release it).
6. Move the latch 11 and bracket 12 fully in the direction indicated to unlock the CPU.
7. Carefully (it may be hot) lift the CPU 13 up out of the socket (***Figure 12e***).
8. See ***page 2 - 18*** for information on inserting a new CPU.

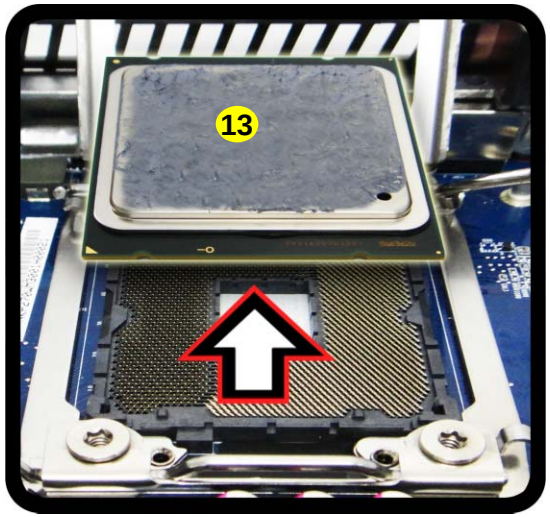
Figure 12
Processor Removal (cont'd)

d. Move the latch 12 and bracket 13 fully in the direction indicated to unlock the CPU.
e. Lift the CPU out of the socket.

d.



e.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

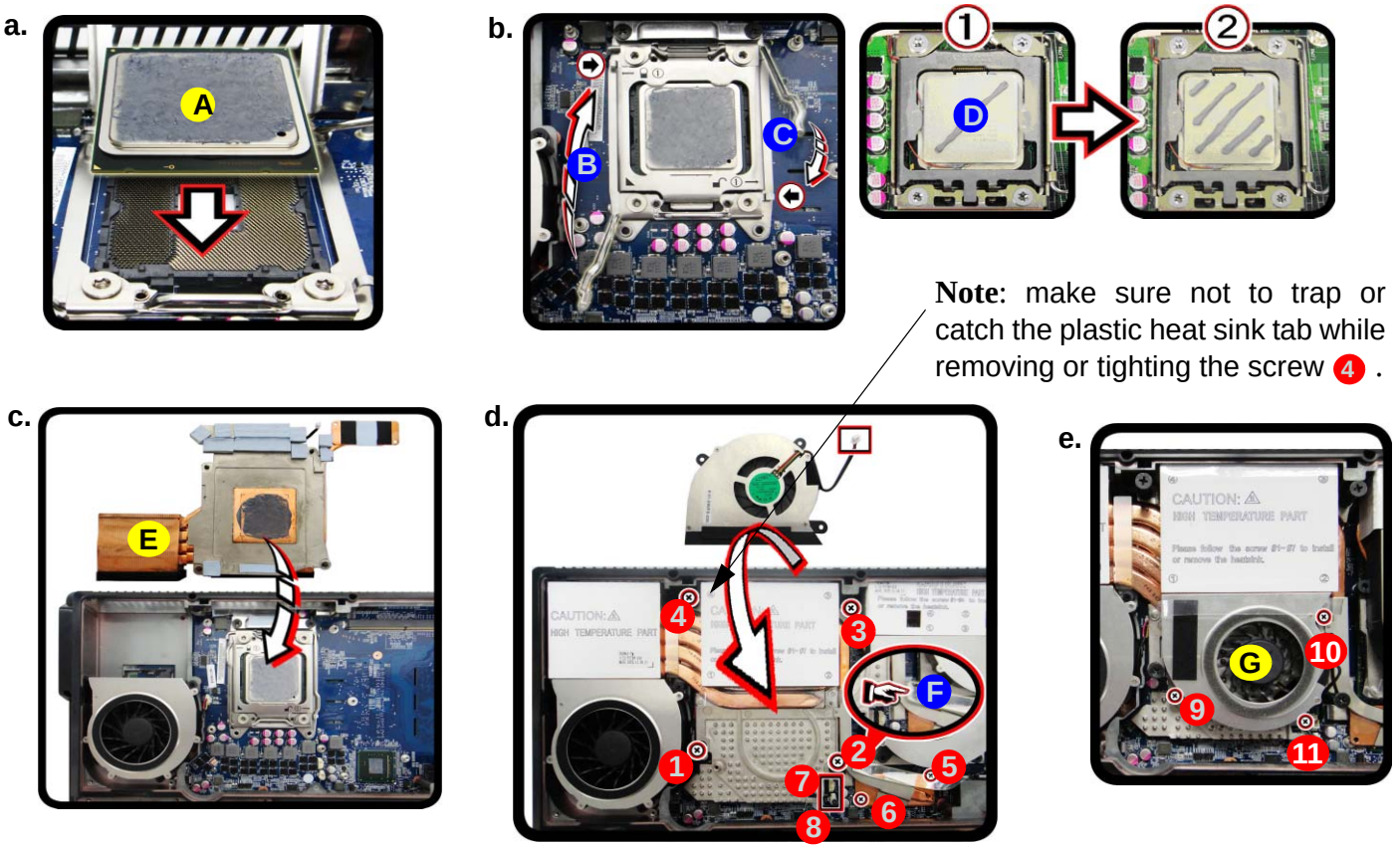
12. CPU

Figure 13
Processor Installation

a. Insert the CPU.
b. Move the latch B towards the lock symbol and bracket C fully in the direction indicated to lock the CPU. Apply therrmal grease.
c. Insert the heat sink.
d. Tighten the screws and connect the CPU fan cables.
e. Tighten the screws.

Processor Installation Procedure

1. Insert the CPU A, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).
2. Move the latch B towards the lock symbol and bracket C fully in the direction indicated to lock the CPU.
3. Apply the thermal grease D to the top of the CPU as shown (***Figure 13b***).
4. Insert the heat sink E (**make sure not to trap or catch the plastic VGA heat sink tab F under the CPU heat sink when inserting it**) note as indicated in ***Figure 13c***.
5. Tighten the CPU heat sink screws 1, 2, 3, 4, 5, & 6 (***Figure 13d***) and connect the CPU fan cables 7 - 8.
6. Insert CPU fan G and tighten the screws 9 - 11 (***Figure 13e***).
7. Replace the component bay cover and tighten the screws (***page 2 - 16***).



A. CPU
E. Heat Sink
G. Heat Sink Fan

- 9 Screws

Removing the VGA Card

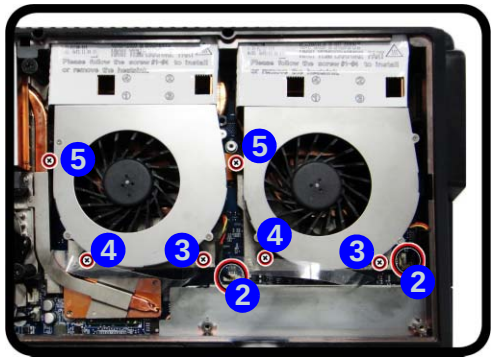
1. Turn off the computer, and turn it over and remove the battery (*page 2 - 5*) and component bay cover (*page 2 - 5*).
2. The VGA card will be visible at point 1 on the mainboard (*Figure 17a*).
3. Carefully disconnect VGA fan cable 2, and remove screws 3 - 5.
4. Remove the VGA fan 6 (two VGA fans are pictured here).
5. Remove screws 7 & 10 from the heat sink **in the order indicated on the label** (and on the heat sink unit itself).
6. Carefully pull the tab 11 and lift at points 12 & 13 to disconnect the heat sink from VGA assembly.
7. Remove the heat sink 14 (two heat sink units are pictured here).

Figure 14
VGA Card Removal

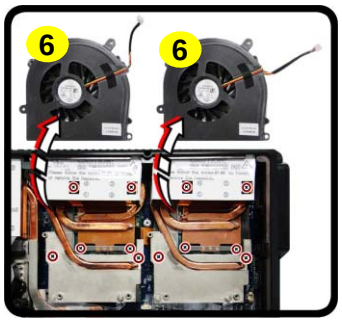
a. Locate the VGA cards.
b. Remove the VGA fan cable and screws.
c. Remove the VGA fan.
d. Remove the screws
e. Lift the heat sink.
f. Remove the heat sink.

a.

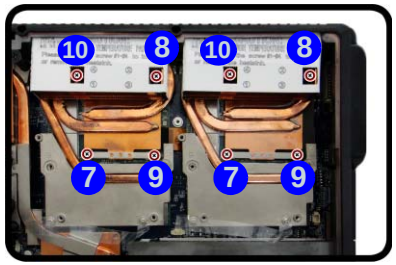
b.



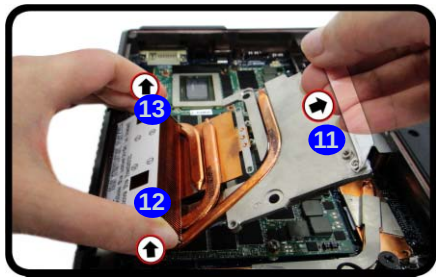
c.



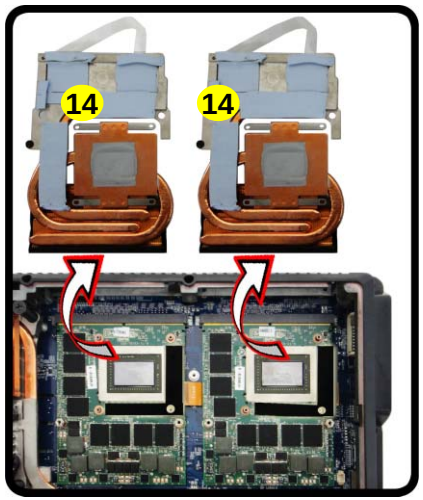
d.



e.



f.



6. VGA Card Fan
15. VGA Card Heatsink

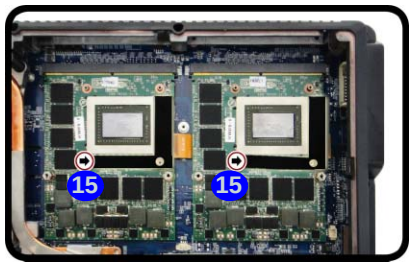
- 14 Screws

Figure 15
VGA Card Removal (cont'd)

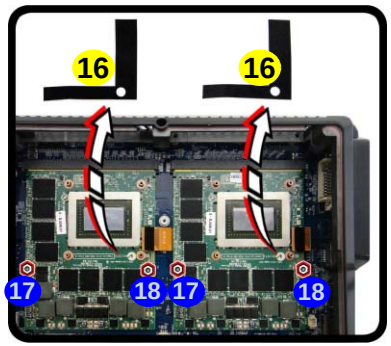
g. Locate the VGA mylar covers.
h. Remove the VGA mylar covers and screws.
i. Remove the VGA card.

8. Remove the VGA mylar covers at point 15 (two VGA mylar covers are pictured here).
9. Remove the VGA mylar 16 and remove screws 17 & 18 from the VGA assembly.
10. Carefully remove the VGA card 19 .
11. If your system includes two video cards you will need to disconnect the cable 18 between the master and slave cards (do not forget to reconnect the cable if you are replacing two cards).

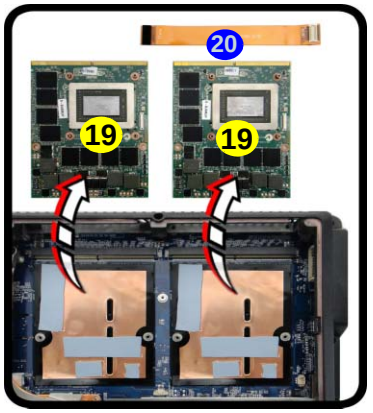
g.



h.



i.



16. VGA mylar covers
19. VGA Card

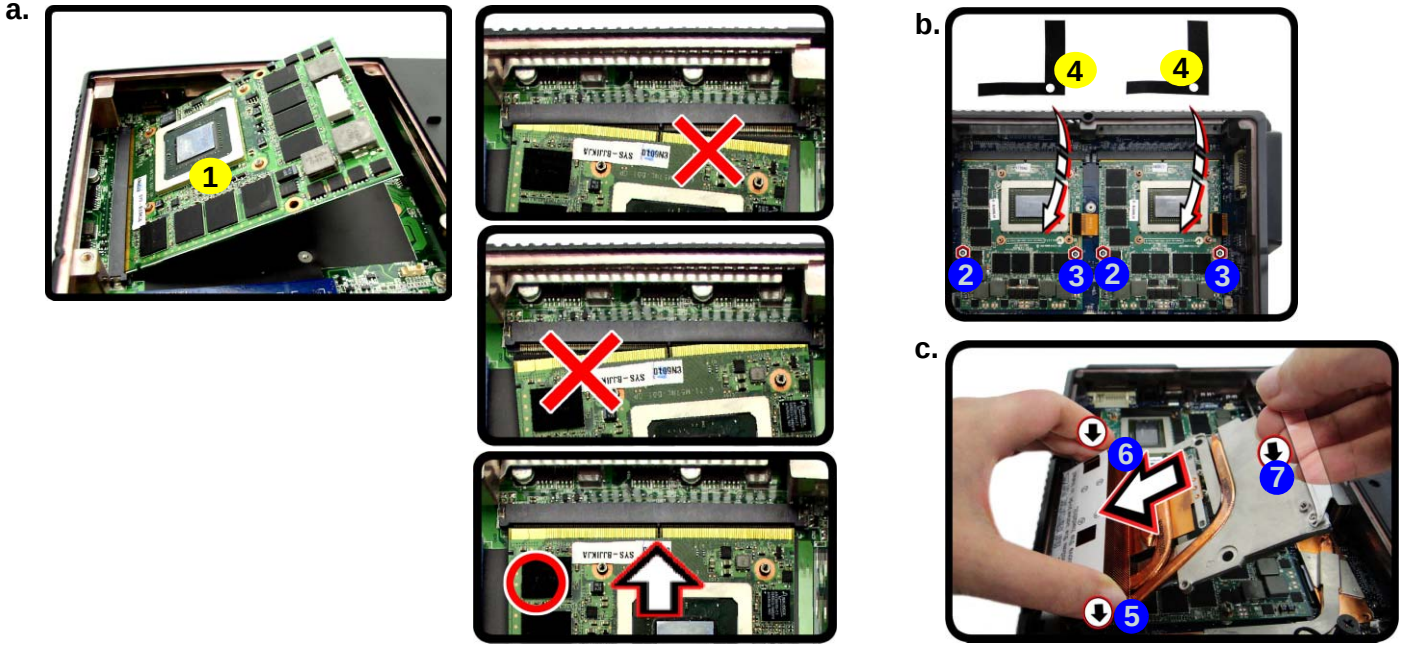
- 4 Screws

Installing the VGA Card

1. Do not forget to replace the master and slave cable if you are replacing two video cards.
2. Prepare to fit the VGA card 1 into the slot by holding it at about a 30° angle.
3. The card needs to be fully into the slot, and the VGA card and socket have a guide-key and pin which align to allow the card to fit securely.
4. Fit the connectors firmly into the socket, straight and evenly.
5. DO NOT attempt to push one end of the card in ahead of the other.
6. The card's pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go** (none of the gold colored contact should be showing). DO NOT FORCE the card; it should fit without much pressure.
7. Secure the card with screws 2 & 3 and mylar covers 4 (two video cards are pictured).
8. Hold the heatsink by the tab 5 & 6 and at point 7 and insert it back on the card and secure the screws in the order indicated in (***page 2 - 19***).
9. Attach the VGA card fan, secure with the screws and reconnect the fan cable as indicated in (***page 2 - 19***).
10. Reinsert the component bay cover, and secure with the screws as indicated in (***page 2 - 14***).

Figure 16
VGA Card Installation

a. Carefully Insert the VGA Card.
b. Tighten the screws.
c. Press the VGA heat sink.



1. VGA card Module
4. VGA mylar covers

Figure 17
Wireless LAN Module Removal

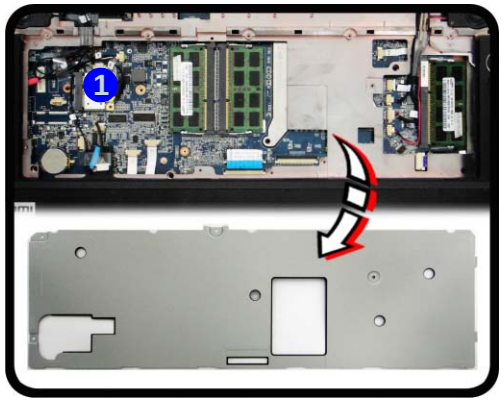
a. Locate the WLAN module.
b. Remove the screw and disconnect the cables.
c. Remove the WLAN module.

Note: Make sure you reconnect the antenna cables.

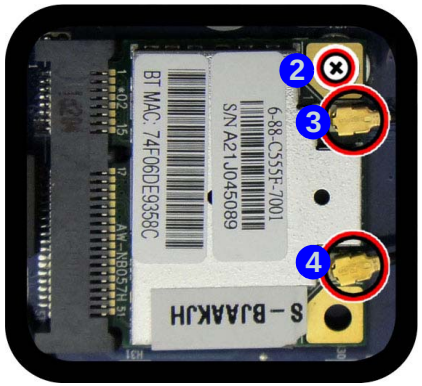
Removing the Wireless LAN Module

1. Turn off the computer, and turn it over, remove the battery (***page 2 - 5***), keyboard and keyboard shielding plate (***page 2 - 10***).
2. The Wireless LAN Module will be visible at point 1.
3. Remove the screw 2 and carefully disconnect cables 3 - 4.
4. The Wireless LAN Module 5 (***Figure c***) will pop-up, and you can remove it.

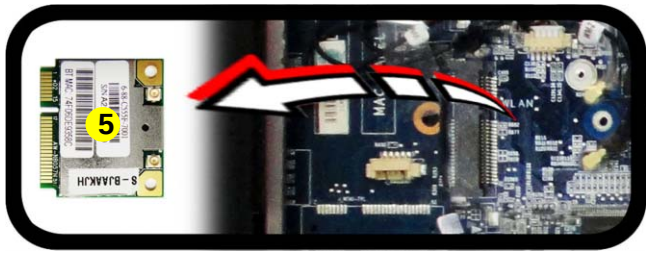
a.



b.



c.



5. Wireless LAN Module

- 1 Screw

Appendix A: Part Lists

This appendix breaks down the ***P270WM/P270WM3*** series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

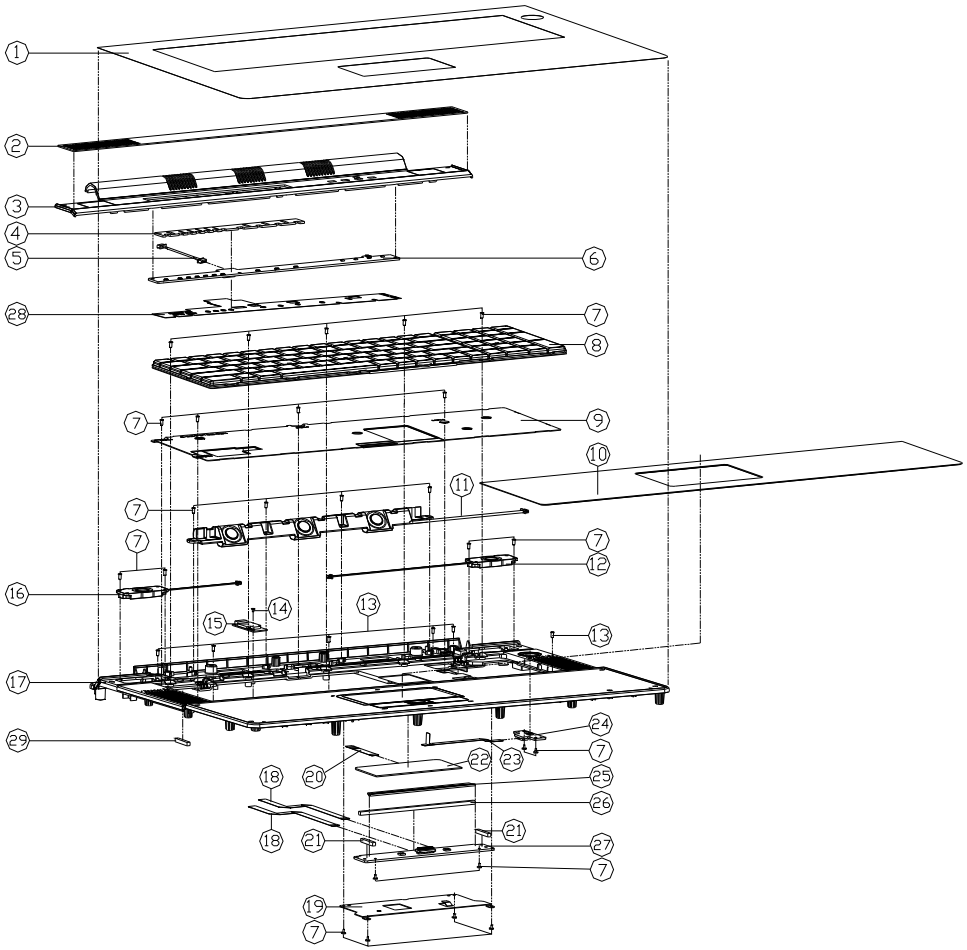
Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A- 1
Part List Illustration Location

Parts	P270WM	P270WM3
Top	*page A - 3*	
Bottom	*page A - 4*	
LCD	*page A - 5*	*page A - 6*
Mainboard	*page A - 7*	
HDD	*page A - 8*	
DVD	*page A - 9*	
COMBO	*page A - 10*	

Top

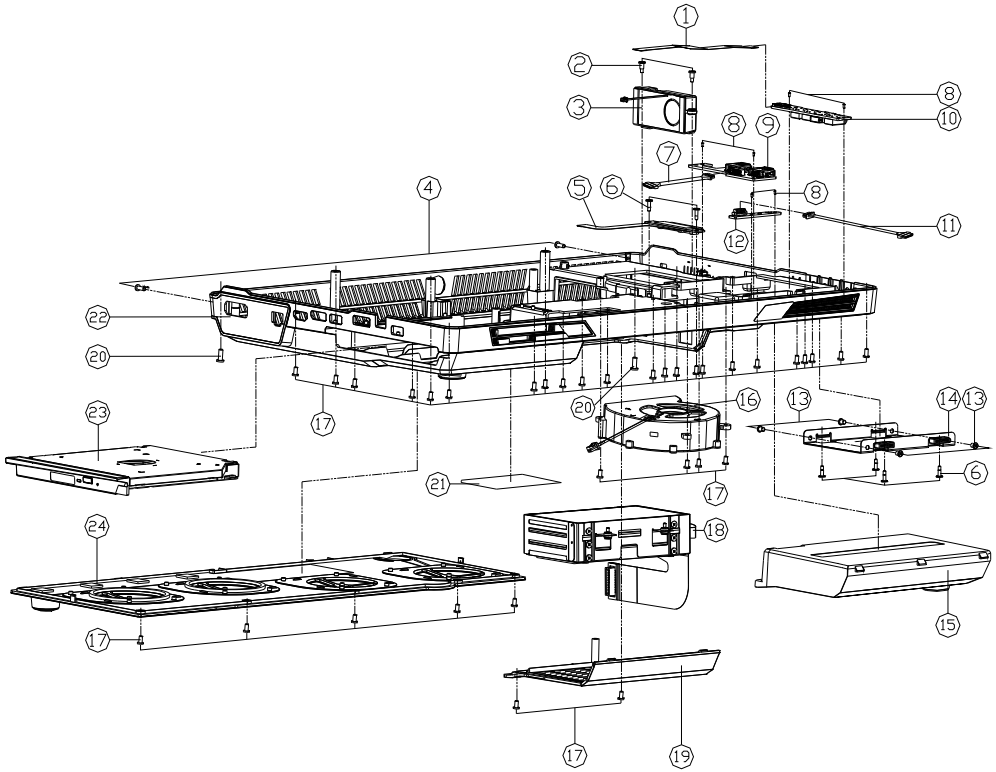


ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT MYLAR PET X7200	6-40-X7208-020	
2	PMMA FOR CENTER COVER PMMA X7200	6-42-X7202-081	
3	CENTER COVER MODULE P270WM	6-42-P2708-301	
4	TOUCH SENSOR LENS PMMA X7200	6-42-X7202-091	
5	WIRE CABLE 2SPIN M/B TO TOUCH SENSOR FOR P270WM	6-43-P2700-030	
6	TOUCH SENSOR BOARD V2.0 P270WM	6-77-P2701-D02	
7	[illegible] SCREW M2*4L I BZ ICT GIY-PATCH (T=0.8 D=4)	6-35-C6120-4RB	
8	K/B USA CBLACK& FRAME 6(SI MODULE P270WM/P270WM3	6-79-P270WMOK-010	
9	KB SHIELDING SECC P270WM	6-33-P2703-021	
10	AL PLATE FOR PLAM REST AL X7200	6-33-X7202-031	
11	SPEAKER L-M-R MODULE(L,R-FRONT & CENTER) 1	6-23-5X720-031	
12	SPEAKER REAR-R MODULE 1W 8Ω 2P (FORGRAND) X7200	6-23-5X720-011	
13	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
14	SCREW M2*3L K1 NI ICT NY (DD=ø4.5,DT=0.4)	6-35-B1120-3RE	
15	[illegible] 8 PIN USB CSR BDM AU HIGH SPEED W/ H	6-88-M77C5-5300	
16	SPEAKER REAR-L MODULE 1.5W 4Ω 2P (FORGRAND) X7200	6-23-5X720-021	
17	TOP CASE MODULE P270WM	6-39-P2702-011	
18	FINGER BOARD FFC CABLE X7200	6-43-X720F-012	
19	TP BRACKET SECC X7200	6-33-X7202-050	
20	TOUCH PAD FFC CABLE X7200	6-43-X7202-012	
21	CLICK SPONGE (21.5*3*3T) SM55 X7200	6-47-0019A-212	
22	TOUCH PAD SYNAPTICS TM-01146-003 MULTI-GESTURE C4800	6-49-C4802-010	
23	POWER BOARD FFC CABLE(HB) P270WM	6-43-P2700-011	
24	SWITCH BOARD V2.0 P270WM	6-77-P270S-D02	
25	TP LENS PMMA X7200	6-42-X7202-0A2	
26	CLICK SPONGE (112.7*3.3*3T) SM55 X7200	6-47-0019A-B20	
27	CLICK BOARD V3.0+FINGER SENSOR BOARD V3.0 ASSY P270WM	6-77-P270A-N03	
28	TOUCH SENSOR CU FOIL+MYLAR P270WM	6-40-P2702-010	
29	RUBBER (12*4*5T,SILICONE) X7200	6-47-00120-123	

Figure A - 1
Top

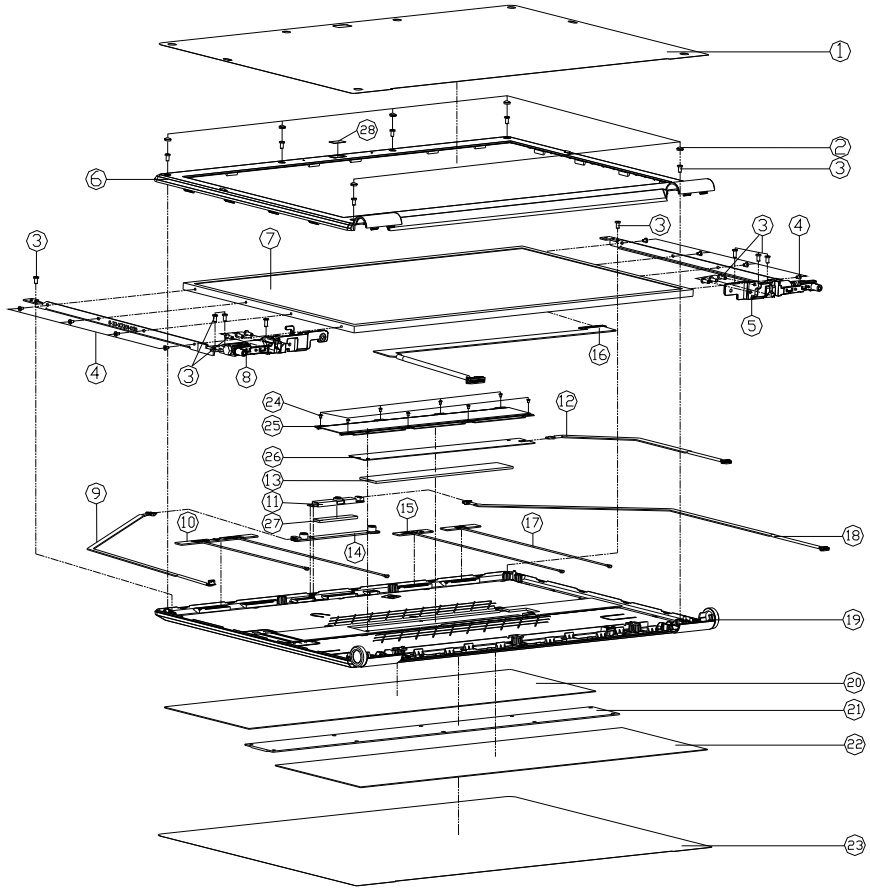
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	AUDIO BOARD FFC CABLE X7200	6-43-X7200-052	
2	(非耐落) SCREW FOR SPEAKER M2 D700T	6-35-Z0Z20-000	
3	SPEAKER SUB_WOOFER MODULE 2W 4Ω 2P Φ6G-CL104 P270WM	6-23-5P270-0W1	
4	SCREW M2*8L KI BK/Z ICT NY	6-35-B6120-8R0	
5	FPC CABLE M/B TO 3RD SATA HDD FOR X7200	6-43-X720J-011	
6	SCREW M2*7.5L DI=2.1 L=4.5 S=2.5 K NI ICT	6-35-81120-750	
7	WIRE CABLE 20PIN M/B TO USB BOARD FOR P270WM	6-43-P2700-020	
8	(非耐落)SCREW M2*4L I BZ ICT GTY-PATCH (T-0.8 D-4)	6-35-C6120-4RB	
9	USB BOARD V3.0 P270WM	6-77-P2703-D03	
10	AUDIO BOARD V3.0 P270WM	6-77-P2708-D03	
11	WIRE CABLE 6PIN M/B TO LCD BOARD FOR X7200	6-43-X7200-032	
12	POWER LED BOARD V2.0 P270WM	6-77-P2704-D02	
13	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2R5	
14	3RD HDD BRACKET SECC X7200	6-33-X720J-021	
15	[illegible]	6-87-X720S-4Z71A	
16	FAN MODULE 5V 79*23.6 P270WM	6-31-P270S-100	
17	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
18	W/3PCS HDD ASS'Y P270WM	6-79-P270WM0J-020	
19	HDD COVER PC+ABS X7200	6-42-X720J-013	
20	SCREW M2.5*8L KI BK/Z NY ICT	6-35-B6125-8R0	
21	PRODUCT LABEL FOR P270WM(CTUVUS LOGO UPDATED)	6-45-P270WM03-011	
21	PRODUCT LABEL FOR P270WM3(CTUVUS LOGO UPDATED)	6-45-P270WM33-011	
22	BOTTOM CASE MODULE P270WM	6-39-P2703-012	
23	SATA DVD SUPER MULTI 8X TS53(SN-208AB/TCAFZ) ASS'Y P270WM	6-79-P270WM0Q-000	
23	SATA BLU-RAY WRITER 5.0V 8.2W 6X PANASONIC(UJ-240-D) (AFN-B) ASS'Y P270WM	6-79-P270WM0W-000	
23	W/O ODD ASS'Y P270WM	6-79-P270WM0Z-000	
24	CPU COVER MODULE P270WM	6-42-P2708-202	

LCD (P270WM)

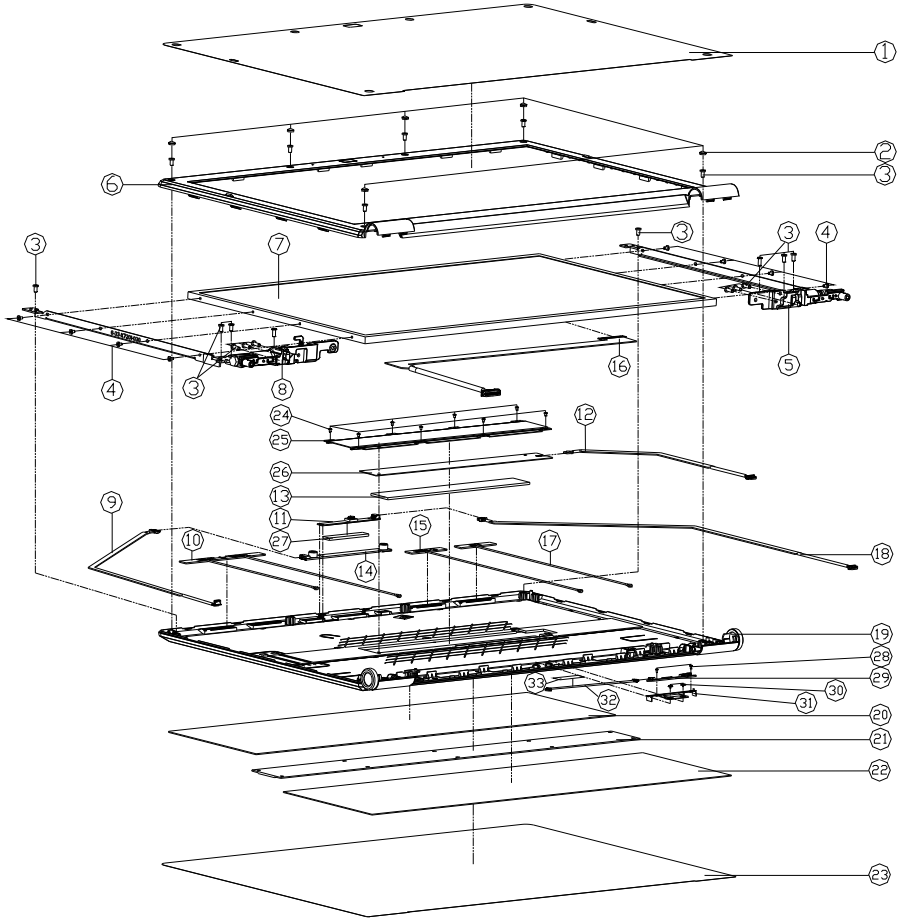


ITEM	PART NAME	PART NO	REMARK
1	FRONT COVER PROTECT MYLAR PET X7200	6-40-X7208-030	
2	FRONT COVER SCREW SILICON RUBBER X7200XCHANG	6-47-X7201-032	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	SCREW M2*3L KI NI ICT NY (D0=Ø4.5,DT=0.4)	6-35-B1120-3RE	
5	HINGE R SECC+SK7+ZN P270WM	6-33-P2701-0R0	
6	LCD FRONT COVER MODULE P270WM	6-39-P2701-010	
7	LCD 17.3" FHD LG LP173WF1-TLB3 (LED) (40/60HZ) 6.0MM	6-50-NB260-L05	(OPTION)
7	LCD 17.3" FHD LG LP173WF1-TLB2 (LED) 6.0MM	6-50-NB260-L04	(OPTION)
7	LCD 17.3" FHD CHIMEI N173HGE-L21 (GLARE TYPE) (LED 6.0 MM	6-50-NB260-D00	(OPTION)
7	LCD 17.3" FHD CHIMEI N173HGE-L11 (LED) 6.0 MM	6-50-NB260-D01	(OPTION)
8	HINGE L SECC+SK7+ZN P270WM	6-33-P2701-0L0	
9	WIRE CABLE 4PIN M/B TO MIC FOR X7200(HL)	6-43-X7204-012	
10	ANTENNA WWAN COMBO FVC WWAN PCB 2AG/3.5GHZ/5G WWAN MPE-WWAN MPE-30MM H2B	6-23-7X720-011	
11	UVC CAMERA BISON FIX UVC(BISON3-310 2M FHD SAMSUNG5E0 PINOUT	6-88-P17EC-4900	(OPTION)
11	UVC CAMERA BISON FIX UVC(BISON1-800 2M HIMAX2258 PINOUT	6-88-X510C-4900	(OPTION)
12	WIRE CABLE 2PIN M/B TO BACK LED BOARD FOR X7200	6-43-X7200-013-1	
13	LCD LIGHT GUIDE PMMA X7200	6-42-X7201-021	
14	DIGITAL-MIC MODULE DK-A02 FOR M980NU	6-23-EM980-010-1	
15	ANTENNA WWAN FVC WNO PCB 2AG/3.5GHZ/5G L=665MM X7200	6-23-7X720-031	
16	WIRE CABLE 40PIN M/B TO LCD LG LP173WF1 FOR P270WM (EDID HL/HL	6-43-P2701-021-K	
17	ANTENNA BLUETOOTH FVC BT PCB 2AG L=695MM FVC X7200	6-23-7X720-021	
18	WIRE CABLE 5PIN M/B TO CCD MODULE FOR X7200(HL)	6-43-X720T-013	
19	LCD BACK COVER MODULE X7200	6-39-X7201-024	
20	LCD AL PLATE TOP AL X7200	6-33-X7201-011	
21	PMMA FOR LCD NEUTRAL LOGO X7200	6-42-X7201-070	
22	LCD AL PLATE BOTTOM AL X7200	6-33-X7201-051	
23	BACK COVER PROTECT MYLAR 8835 X7200	6-40-X7208-040	
24	SCREW M2*3L I BZ ICT GTY-PATCH NY (T=0.5 D=4)	6-35-C2120-3R0	
25	BACK COVER BRACKET SECC X7200	6-33-X7201-091	
26	LCD LOGO MODULE CABLE FOR X7200	6-43-X7204-020	
27	GASKET (40*10*1.5) D900C	6-47-00190-40D	
28	W/O CCD COSMETIC PC M810L	6-42-M8101-020	

Figure A - 3
LCD (P270WM)

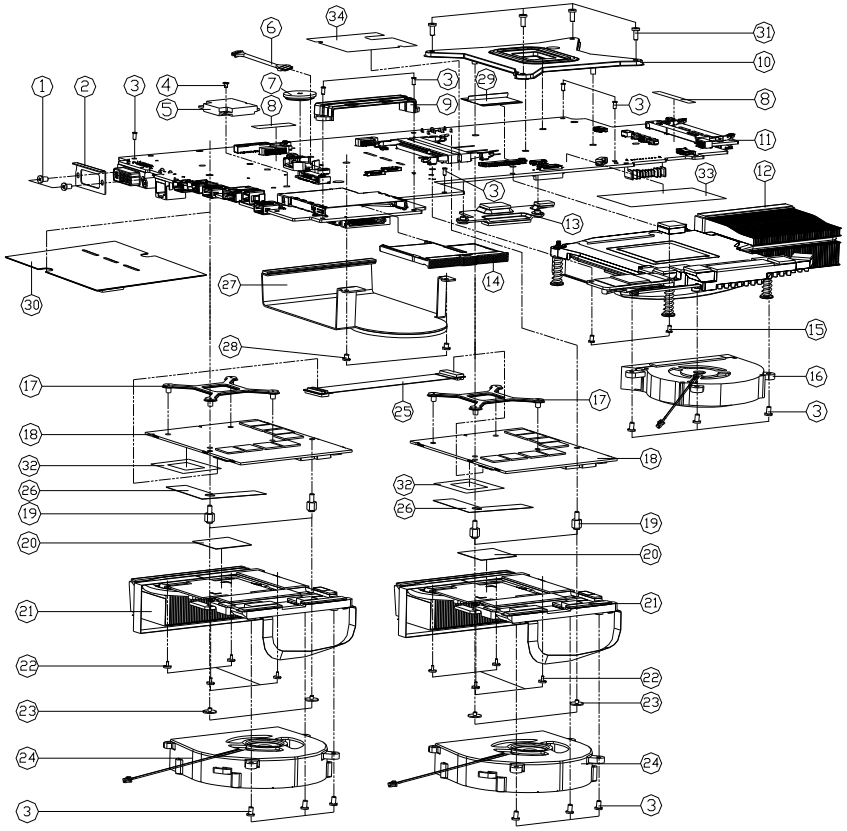
LCD (P270WM3)

Figure A - 4
LCD (P270WM3)



ITEM	PART NAME	PART NO	REMARK
1	FRONT COVER PROTECT MYLAR PET X7200	6-40-X7208-030	
2	FRONT COVER SCREW SILICON RUBBER X7200KCHANG	6-47-X7201-032	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	SCREW M2*3L KI NI ICT NY (OD=ø4.5,DT=0.4)	6-35-B1120-3RE	
5	HINGE R SECC+SK7+ZN P270WM	6-33-P2701-0R0	
6	LCD FRONT COVER MODULE P270WM	6-39-P2701-010	
7	LCD 17.3" FHD LG LP173WF2-TPB1 (LED) (3D) 6.5MM	6-50-NB265-L04	(OPTION)
8	HINGE L SECC+SK7+ZN P270WM	6-33-P2701-0L0	
9	WIRE CABLE 4PIN M/B TO MIC FOR X7200KHL)	6-43-X7204-012	
10	ANTENNA WWAN CONN(TYC WM-WVE PCB 2AL/2SMX/SG WM-FRAM WVE-SMM KCM)	6-23-7X720-011	
11	OVC CAMERA MODULE FIX (NBPACC53-30 2M FHD SAMSUNG5E5 P17EW	6-88-P17EC-4900	(OPTION)
11	OVC CAMERA MODULE FIX (NBPACU5A1-000 2M HYNIX2050 P15AW	6-88-X510C-4900	(OPTION)
12	WIRE CABLE 2PIN M/B TO BACK LED BOARD FOR X7200	6-43-X7200-013-1	
13	LCD LIGHT GUIDE PMMA X7200	6-42-X7201-021	
14	DIGITAL-MIC MODULE DK-A02 FOR M980NU	6-23-EM980-010-1	
15	ANTENNA WWAN FVC WIFI PCB 2.4G/3SMX/SG L=665MM X720	6-23-7X720-031	
16	WIRE CABLE MIC(3P) ELCB 2M PHILOSOPH UL(AWM2464) 80UL CM(+)/VFW FOR (NMIC)	6-43-P2701-011-J	
17	ANTENNA BLUETOOTH FVC BT PCB 2.4G L=695MM FVC X720	6-23-7X720-021	
18	WIRE CABLE 5PIN M/B TO CCD MODULE FOR X7200KHL)	6-43-X7201-013	
19	LCD BACK COVER MODULE X7200	6-39-X7201-024	
20	LCD AL PLATE TOP AL X7200	6-33-X7201-011	
21	PMMA FOR LCD NEUTRAL LOGO X7200	6-42-X7201-070	
22	LCD AL PLATE BOTTOM AL X7200	6-33-X7201-051	
23	BACK COVER PROTECT MYLAR 8835 X7200	6-40-X7208-040	
24	SCREW M2*3L I BZ ICT GTY-PATCH NY (T=0.5 B=4)	6-35-C2120-3R0	
25	BACK COVER BRACKET SECC X7200	6-33-X7201-091	
26	LED LOGO MODULE CABLE FOR X7200	6-43-X7204-020	
27	GASKET (40*10*1.5) D900C	6-47-00190-40D	
28	SCREW M1.6*4L (T=0.7 OD3.0) KI NI ICT NY	6-35-B1116-4R0	
29	3M KI (NOTEBOOK EMITTER) FOR (LED)(3D) NVIDIA (WB-)(NBS-000-00 AS P270WM)	6-88-P1733-7801	
30	SCREW M2*2L KI BK/Z ICT NY (ø6,T=0.5)	6-35-B6120-2RC	
31	3D EMITTER BRACKET SECC 0.5MM P270WM3	6-33-P2701-010-D	
32	WIRE CABLE FOR 3D EMITTER L265 TO MB 5P FOR P270WM (NL)	6-43-P2706-021	
33	TAPE MYLAR (C),MYLAR W550J	6-40-W55J2-030	

Mainboard

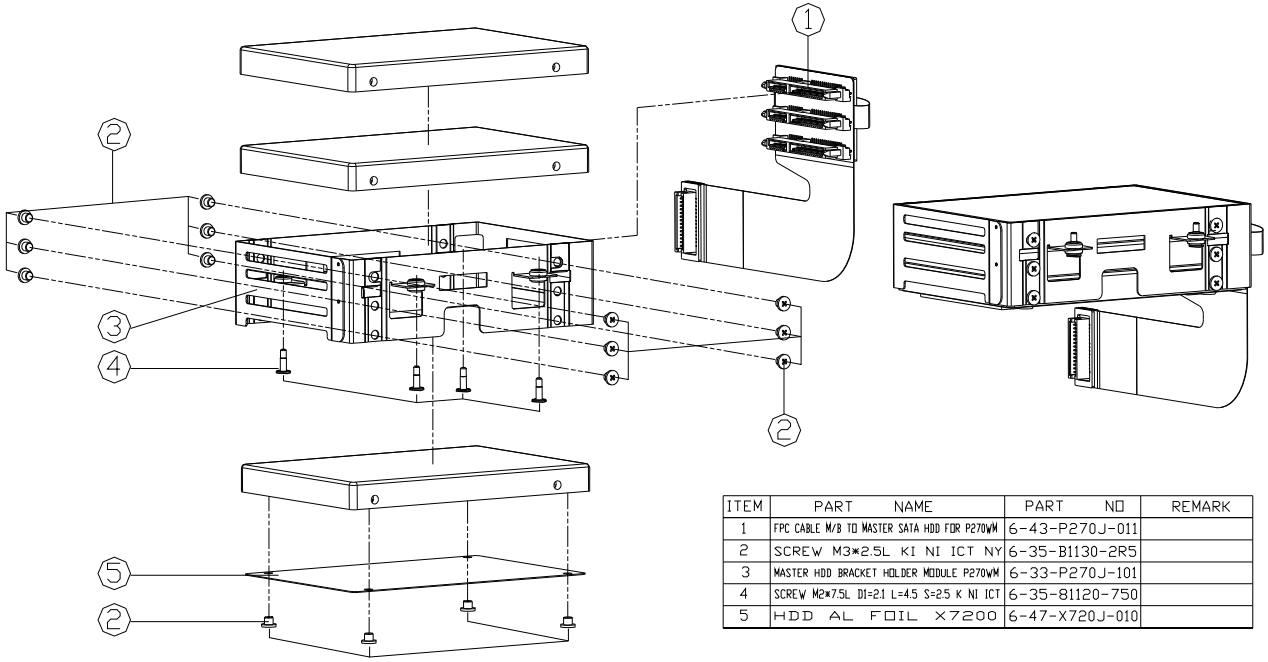


ITEM	PART NAME	PART NO	REMARK
1	SCREW 4-40*5L K NI ACT NY	6-35-81304-5R0	
2	DVI BRACKET SUS X7200	6-33-X720S-021	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	SCREW M2*3L KI NI ICT NY (D0=Φ4.5,DT=0.4)	6-35-B1120-3RE	
5	[illegible]	6-88-W1102-5301	<OPTION>
5	[illegible]	6-88-P170F-4200	<OPTION>
5	[illegible]	6-88-C555F-7001	<OPTION>
5	[illegible]	6-88-C555F-5300	<OPTION>
5	[illegible]	6-88-M77C2-4220	<OPTION>
5	[illegible]	6-88-W1102-9400	<OPTION>
6	[illegible]	6-43-P270B-010	<OPTION>
7	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-62015-607	
8	TAPE MYLAR (C),MYLAR M550J	6-40-M55J2-030	
9	NEWCARD COVER (PC+ABS CM6540 7010C)P270WM	6-42-P2703-010	
10	CPU SUPPORTTER FOR P270WM	6-33-P270S-011	
11	MAIN BOARD V30A (TPA3113D2) P270WM	6-77-P2700-D03A	
12	CPU THERMAL MODULE FOR P270WM	6-31-P270N-102	
13	AL PLATE (CPU CHIP) FOR P270WM	6-33-P270S-021	
14	DUMMY NEW CARD PC+ABS P270WM	6-42-P2708-011	
15	[illegible]	6-35-C6120-4RB	
16	FAN MODULE 5V 79*23.6 P270WM	6-31-P270S-100	
17	VGA SUPPORTER SUS430 X7200	6-33-X720S-040	
18	[illegible]	6-77-X510L-101-1	FOR P270WM/WM3
18	[illegible]	6-88-X720V-7800	FOR P270WM
19	SCREW M2.5*10.7L(T=8 D=5MM) ICT NY FOR VGA CARD	6-35-Z1125-AR7	
20	THERMAL PAD 26x8x4.2 FOR NVIDIA GTX VGA (PSU) P150WM	6-48-X5108-020	
21	VGA HEATSINK NVIDIA FOR P270WM	6-31-P270N-012	
22	SCREW M1.6*3.5L KIT=12 D=4.5) BZ ICT NY	6-35-82116-3R5	
23	SCREW M2*2L KI BK/Z ICT NY(D8,T=0.6)	6-35-B6120-2RE	
24	[illegible]	6-31-X720S-101	
25	[illegible]	6-43-X7200-070	ONLY FOR TWO VGA CARD
26	MYLAR FOR VGA SLI M980NUXCHANGE)	6-40-M9800-011	ONLY FOR TWO VGA CARD
27	VGA PLANK FOR P270WM	6-33-P270S-031	ONLY FOR ONE VGA CARD
28	SCREW M2.5*3L KI BZ ICT NY	6-35-B6125-3R0	
29	FFC 26PIN MB TO KB BOARD P270WM H8	6-43-P2703-010	
30	CU FOIL MYLAR (IN M/B FOR VGA P270WM	6-40-P270S-011	
31	SCREW M2.5*5L KI BK/Z ICT NY	6-35-B6125-5RA	
32	MYLAR VGA CHIP NV P270WM	6-40-P270S-030	
33	MYLAR (92*27.5) FOR M/B L.92XW27.5 P270WM	6-40-P270S-050	
34	MYLAR FOR M/B PCH P270WM	6-40-P270S-040	

Figure A - 5
Mainboard

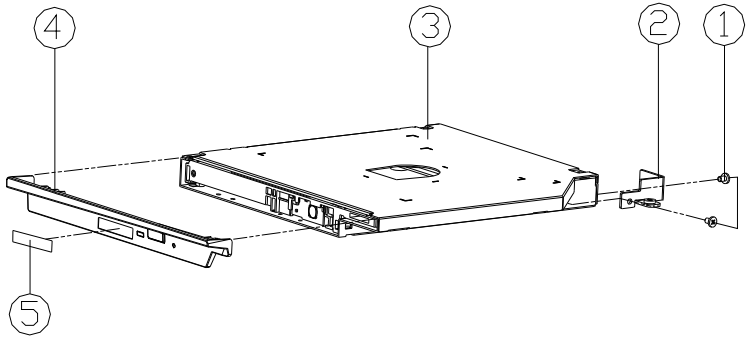
HDD

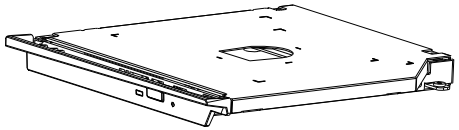
Figure A - 6
HDD



ITEM	PART NAME	PART NO	REMARK
1	FPC CABLE M/B TO MASTER SATA HDD FOR P270WM	6-43-P270J-011	
2	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2R5	
3	MASTER HDD BRACKET HOLDER MODULE P270WM	6-33-P270J-101	
4	SCREW M2*7.5L DI=2.1 L=4.5 S=2.5 K NI ICT	6-35-81120-750	
5	HDD AL FOIL X7200	6-47-X720J-010	

DVD



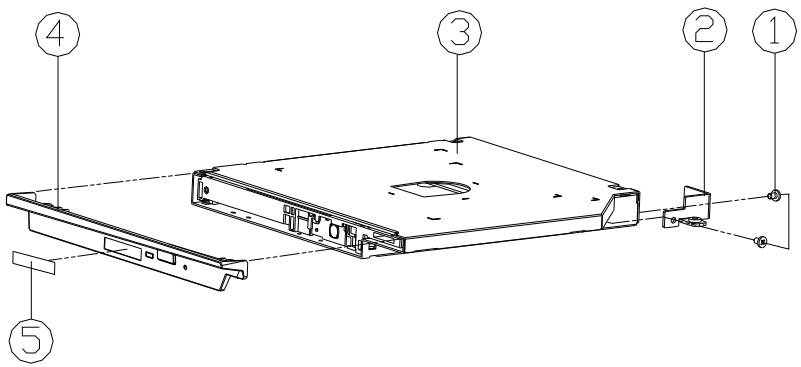


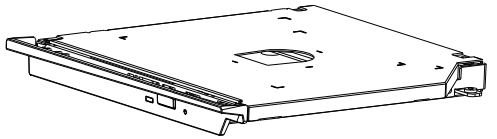
ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*2.5L KI NI ICT NY (Ø4 t=0.3)	6-35-B1120-2R5	
2	CD ROM BRACKET SECC M980NU	6-33-M980Z-010	
3	[illegible]	6-85-A078X-T11	FOR TSST
3	[illegible]	6-85-A078X-L06	FOR PLDS
4	ODD SUPER MULTI BEZEL MODULE X7200	6-42-X720Q-102	
5	SUPER MULTI ODD BEZEL LABEL (SIZE CHANGE)	6-45-W860Q-011	

Figure A - 7
DVD

COMBO

Figure A - 8
COMBO





ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*2.5L KI NI ICT NY (Ø4 t=0.3)	6-35-B1120-2R5	
2	CD ROM BRACKET SECC M980NU	6-33-M980Z-010	
3	SATA BLU-RAY COMBO 5 1/4" 6X 12.7MM C14PL ROM VER A03B (QTY 7, ODM) HLDS	6-85-B076X-513	FOR HLDS
3	SATA BLU-RAY COMBO 5 1/4" 6X 12.7MM SLOT ODD, W/O FW DOWNLOAD, W/O TRAY IN, W/O TRAY, W/O SUPPORT PANASONIC	6-85-B076X-P12	FOR PANASONIC
3	SATA BLU-RAY WRITER 5 1/4" 6X 12.7MM SLOT W/FW DOWNLOAD, W/TRAY IN, W/O TRAY (QTY 7, VI, JP, ARCS) PANASONIC	6-85-B076X-P22	FOR PANASONIC
4	ODD BEZEL MODULE P270WM	6-42-P270Z-100	
5	BLU-RAY ODD BEZEL LABEL (SIZE CHANGE) W860CU	6-45-W860W-011	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***P270WM/P270WM3*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	*PCH PCI - Page B - 23*	*HDD, ODD - Page B - 44*
Sandy Bridge - DDR 0 & 1 - Page B - 3	*PCH USB/PCIE/DMI - Page B - 24*	*AC_IN, Charger - Page B - 45*
Sandy Bridge - DDR 2 & 3 - Page B - 4	*PCH SATA - Page B - 25*	*eSATA+USB, USB Charge - Page B - 46*
Sandy Bridge - DDR ControI - Page B - 5	*PCH GPIO/HDA - Page B - 26*	*Power V_SM, VTT MEM - Page B - 47*
Sandy Bridge - Control - Page B - 6	*PCH NVRAM - Page B - 27*	*Power CPU_PLL, 1.05V - Page B - 48*
Sandy Bridge - PEG & DMI - Page B - 7	*PCH SAS - Page B - 28*	*Power 12V, 1.1VM - Page B - 49*
Sandy Bridge - PEG - Page B - 8	*PCH Power - Page B - 29*	*Power Switch - Page B - 50*
Sandy Bridge - N-Power - Page B - 9	*PCH GND - Page B - 30*	*Power VDD3/ VDD5 - Page B - 51*
Sandy Bridge - O-Power - Page B - 10	*Clock Generator, Buffer - Page B - 31*	*Power CPU_VTT - Page B - 52*
Sandy Bridge - VSS - Page B - 11	*TPM 1.2 - Page B - 32*	*CPU1 L6751 Controller - Page B - 53*
Sandy Bridge - QPI - Page B - 12	*USB 3.0 - Page B - 33*	*CPU2 Power Stage - Page B - 54*
DDR3 CHA SO-DIMM 0 - Page B - 13	*EC ITE8519 - Page B - 34*	*DAUGHTER CON - Page B - 55*
DDR3 CHB SO-DIMM 1 - Page B - 14	*Fan Control - Page B - 35*	*Backlight Keyboard - Page B - 56*
DDR3 CHC SO-DIMM 2 - Page B - 15	*Audio Codec ALC892, DMIC - Page B - 36*	*AUDIO BOARD - Page B - 57*
DDR3 CHD SO-DIMM 3 - Page B - 16	*Audio AMP - Page B - 37*	*CLICK BOARD - Page B - 58*
MXM 3.0 PCI-E MASTER - Page B - 17	*WLAN, TV Card - Page B - 38*	*K/B CONVERTER BOARD - Page B - 59*
MXM 3.0 PCI-E SLAVE - Page B - 18	*LAN PHY Intel 82579V - Page B - 39*	*SWITCH BOARD - Page B - 60*
Display Port, New Card - Page B - 19	*Card Reader JMB389 - Page B - 40*	*USB BOARD - Page B - 61*
HDMI - Page B - 20	*IEEE 1394 - Page B - 41*	*FINGER SENSOR BOARD - Page B - 62*
LCD, eDP, 3D Emitter - Page B - 21	*POWER SYSTEM - Page B - 42*	*TOUCH SENSOR BOARD - Page B - 63*
DVI - Page B - 22	*BT, CCD - Page B - 43*	*POWER LED BOARD - Page B - 64*

Table B - 1
Schematic Diagrams

Version Note

The schematic diagrams in this chapter are based upon version 6-7P-P2709-003A. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

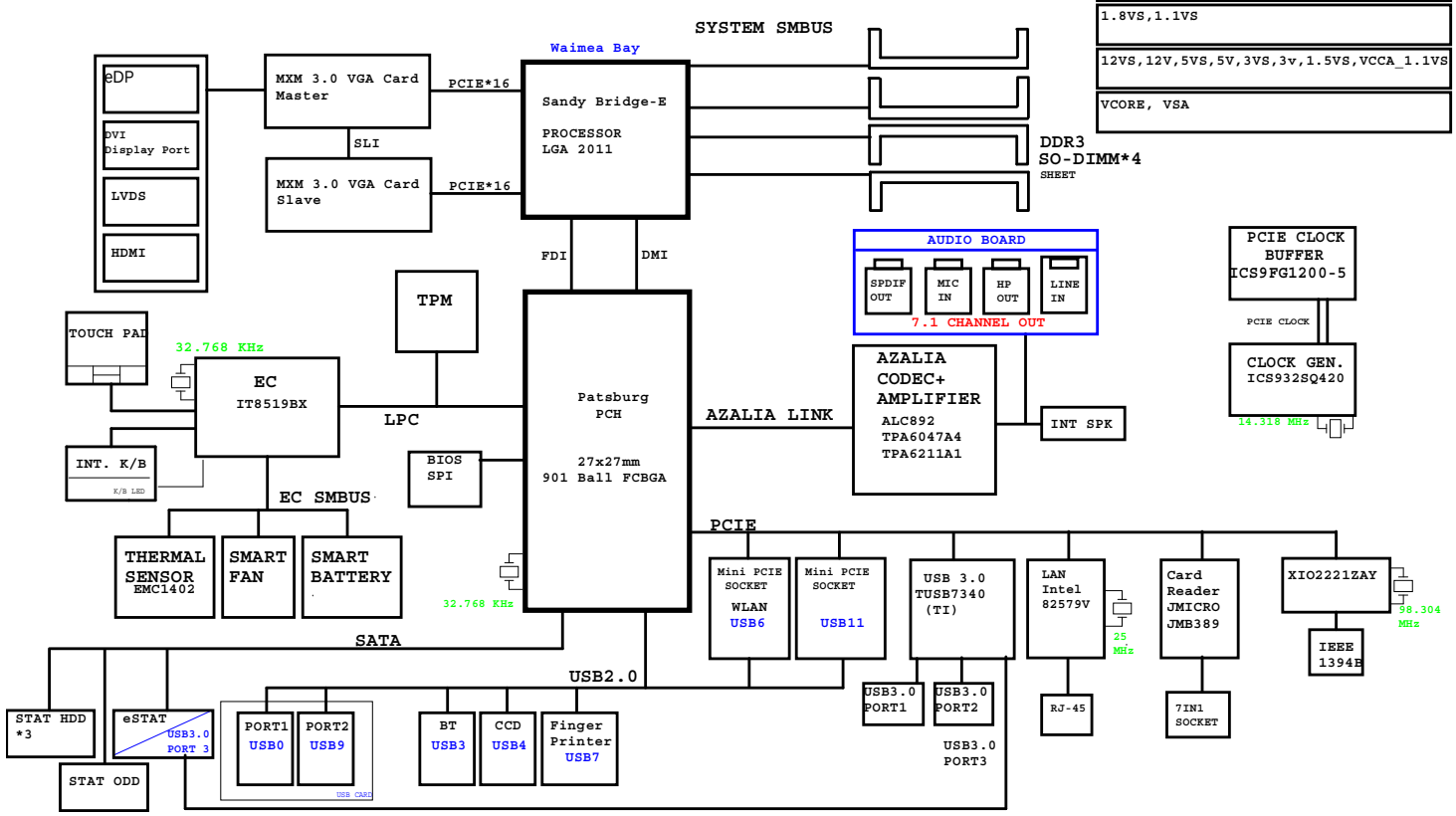
Sheet 1 of 63
System Block Diagram

PCB 9 IN1	6-7P-P2709-003A	*
MAIN/B	6-71-P2700-D03A	*
TOUCH SENSOR/B	6-71-P2701-D02	
CLICK/B	6-71-P2702-D03	*
USB/B	6-71-P2703-D03	*
POWER LED/B	6-71-P2704-D02	
KB/B	6-71-P2707-D01	*
AUDIO/B	6-71-P2708-D03	*
FINGER SENSOR/B	6-71-P270F-D03	*
SWITCH/B	6-71-P270S-D02	

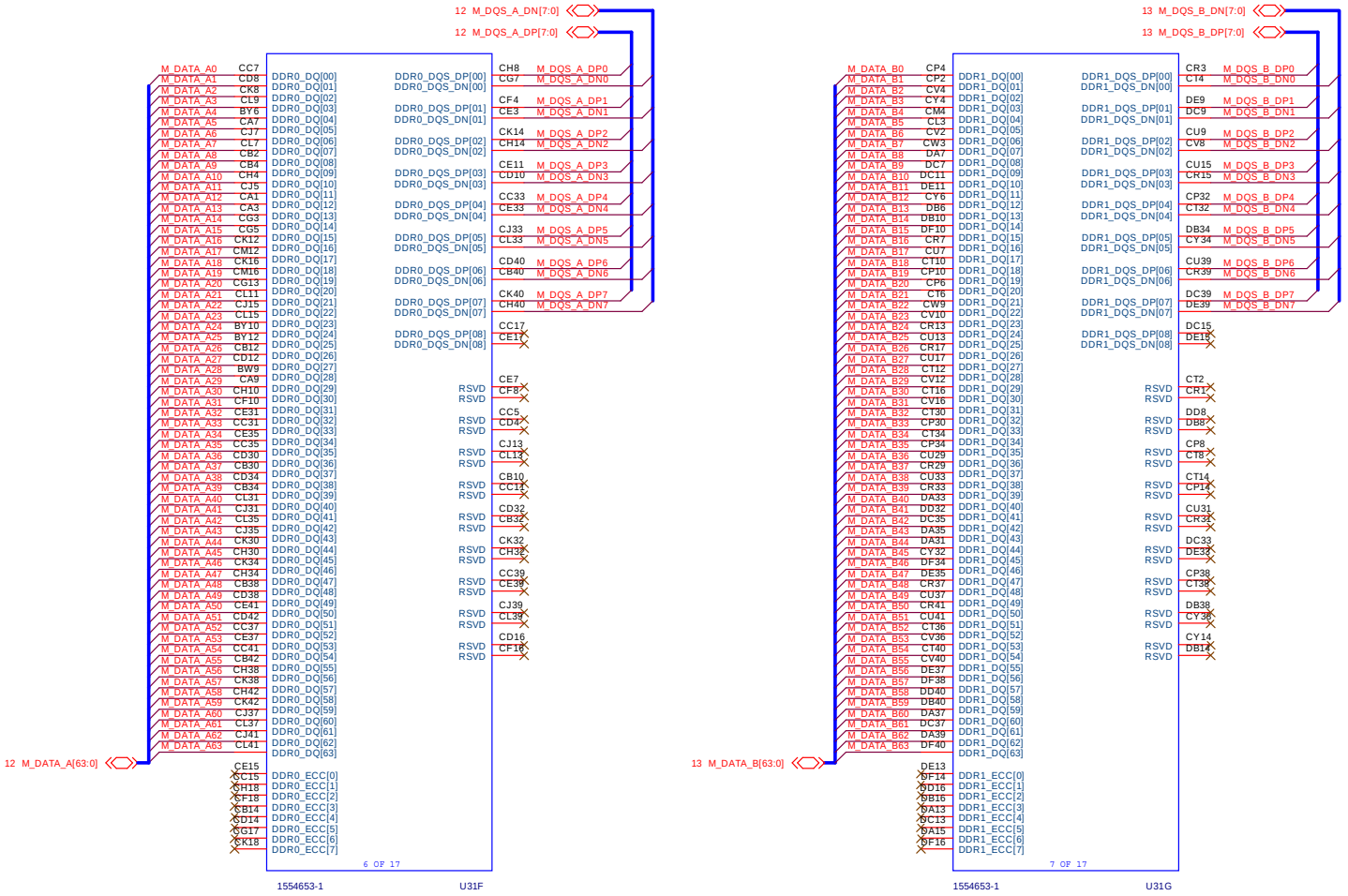
P270WMMB-0D (K/BGWGè3C)

P270WM Block Diagram

SYS5V,SYS10V,SYS15V,VDD3,VDD5,ICH_1.1VS
VIN,VA
CPU_VTT
1.5V,0.75VS
1.8VS,1.1VS
12VS,12V,5VS,5V,3VS,3v,1.5VS,VCCA_1.1VS
VCORE, VSA



Sandy Bridge - DDR 0 & 1

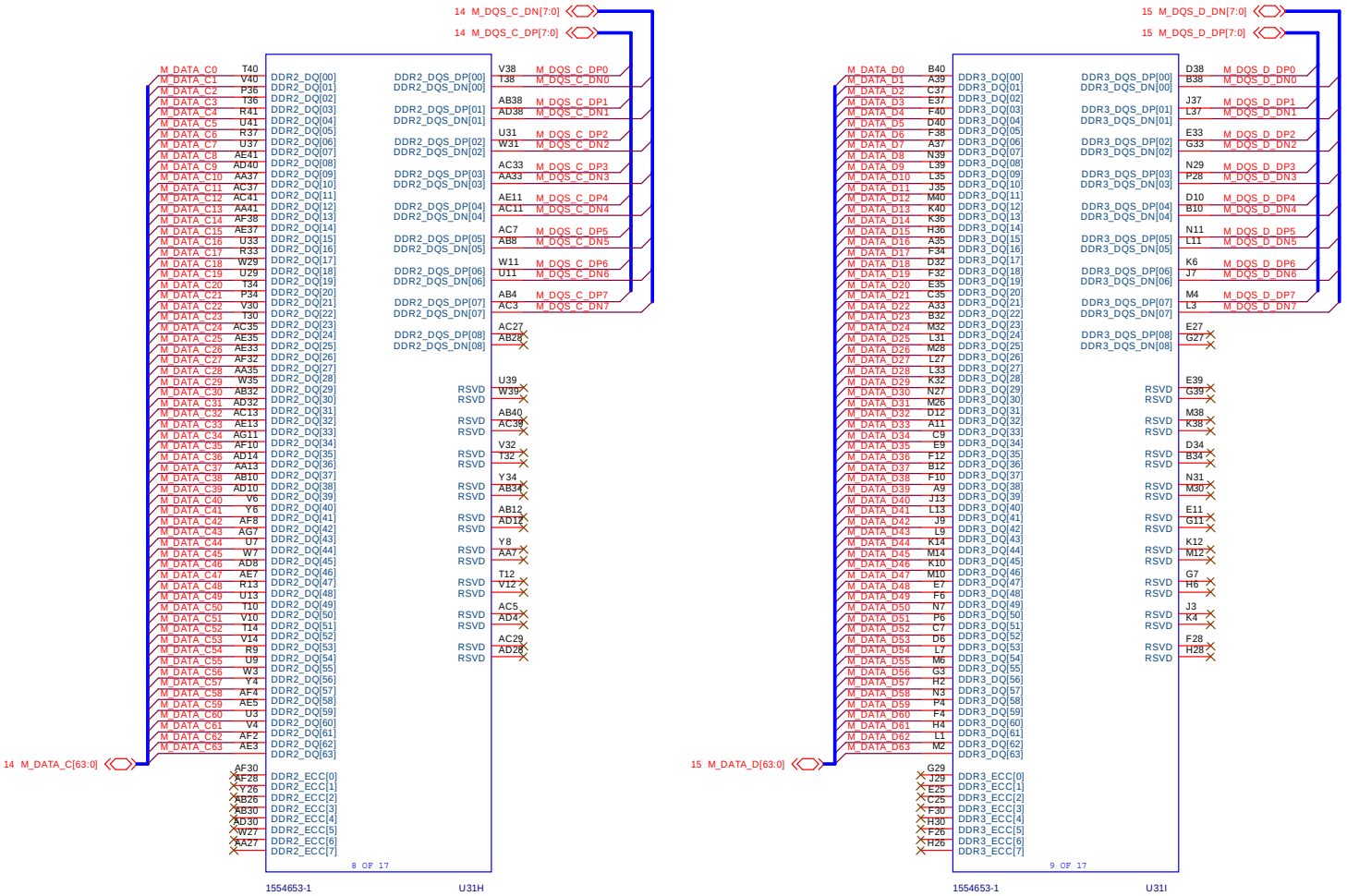


Sheet 2 of 63
Sandy Bridge - DDR 0 & 1

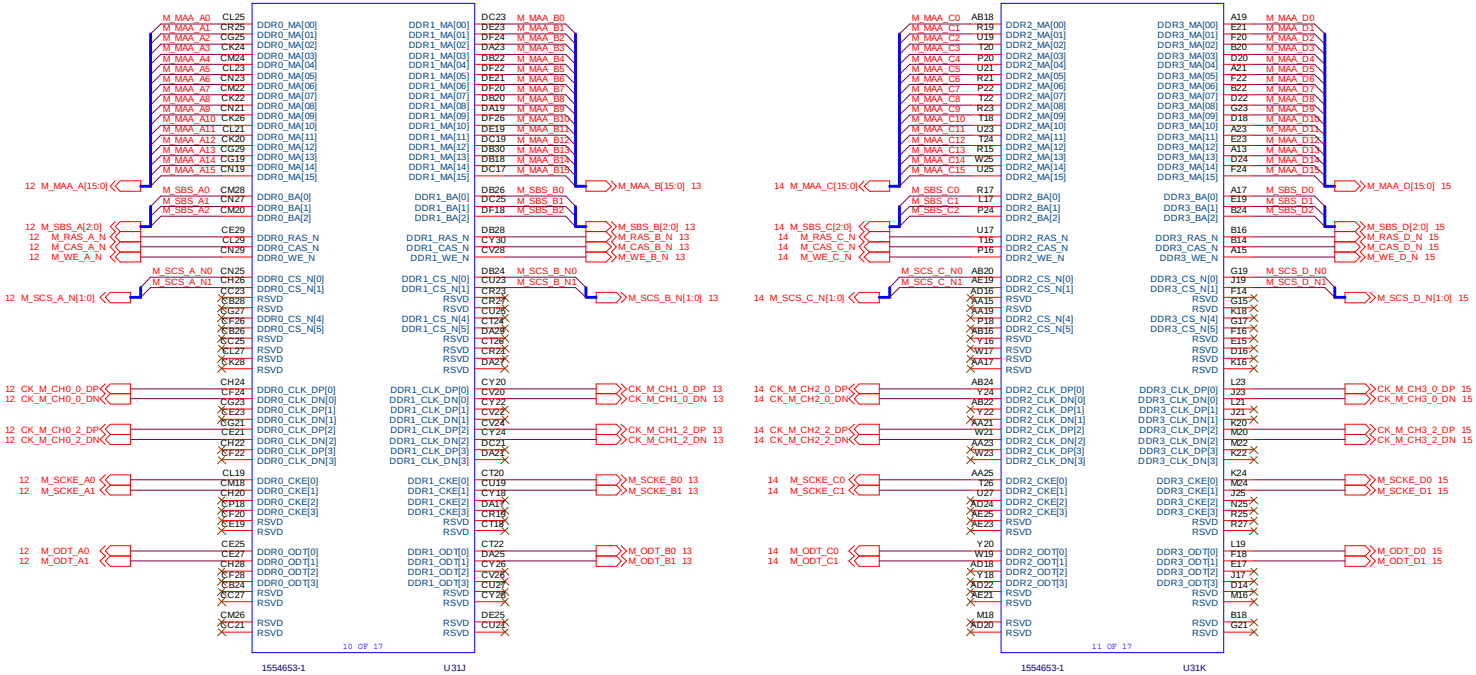
B.Schematic Diagrams

Sandy Bridge - DDR 2 & 3

Sheet 3 of 63
Sandy Bridge - DDR 2 & 3



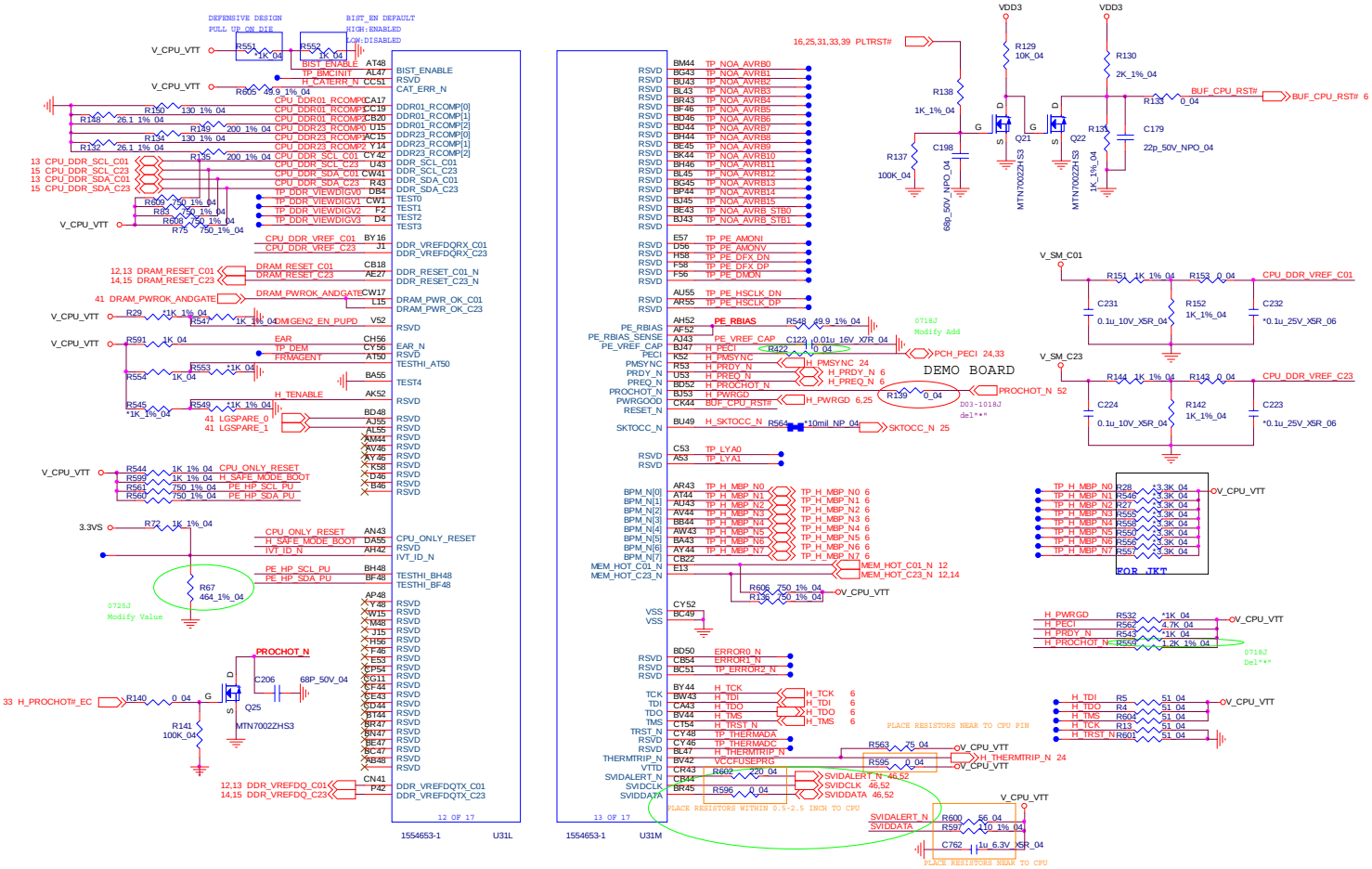
Sandy Bridge - DDR Control



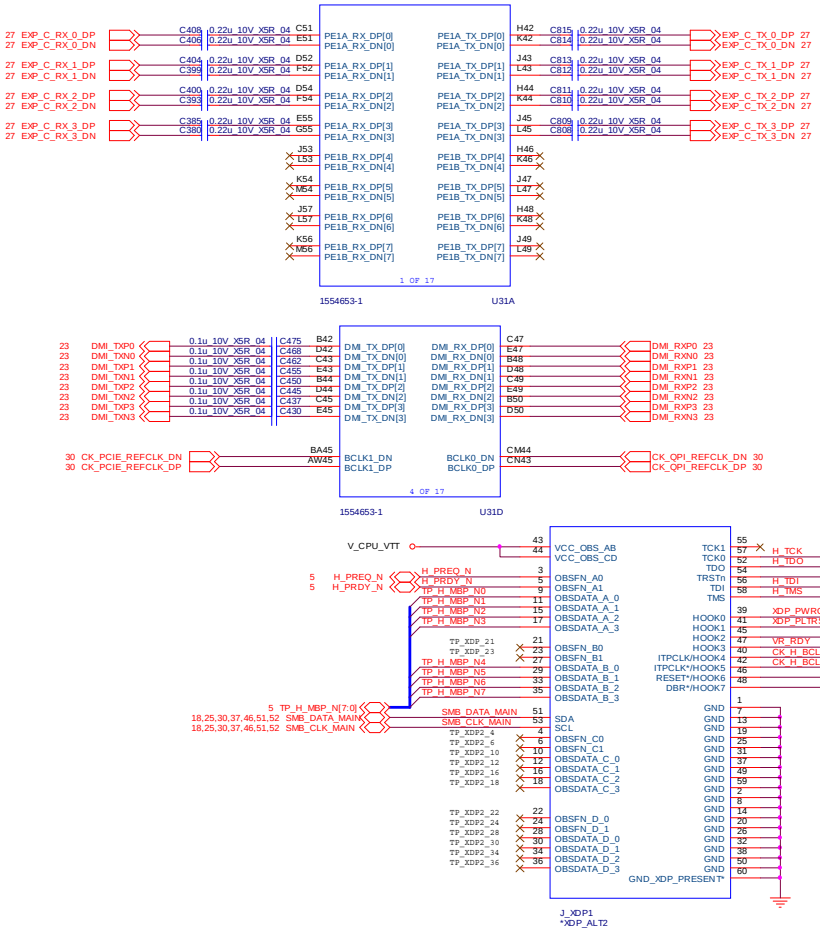
Sheet 4 of 63
Sandy Bridge - DDR Control

Sandy Bridge - Control

Sheet 5 of 63
Sandy Bridge - Control



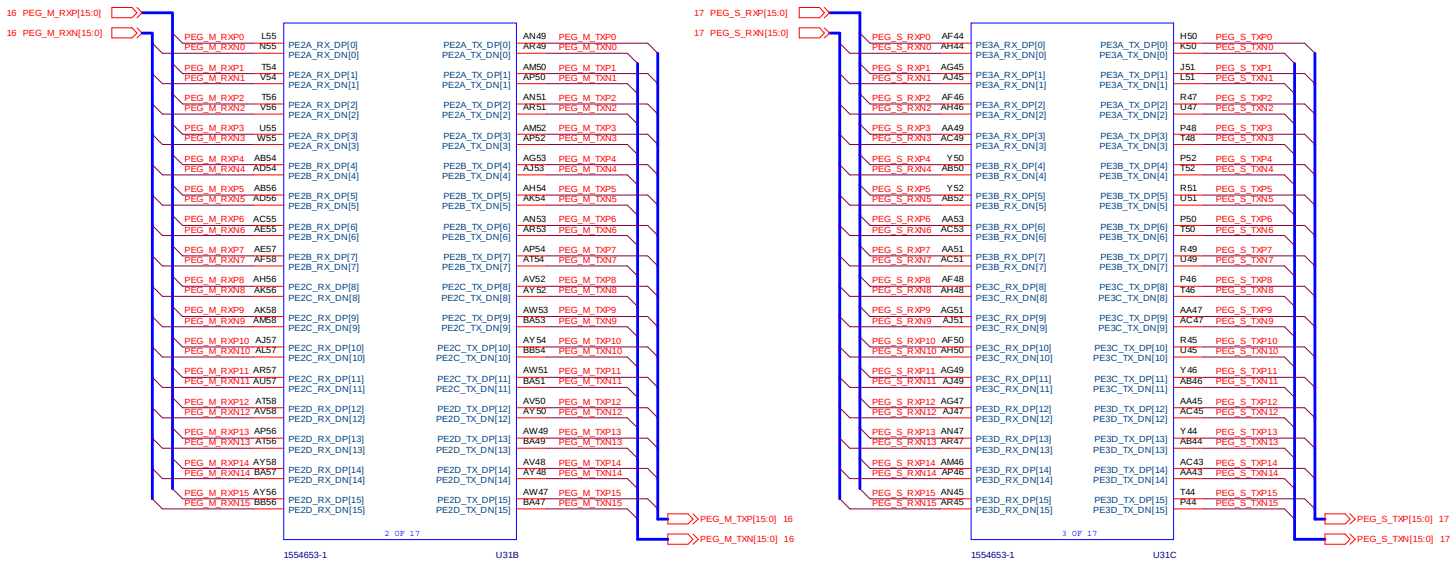
Sandy Bridge - PEG & DMI



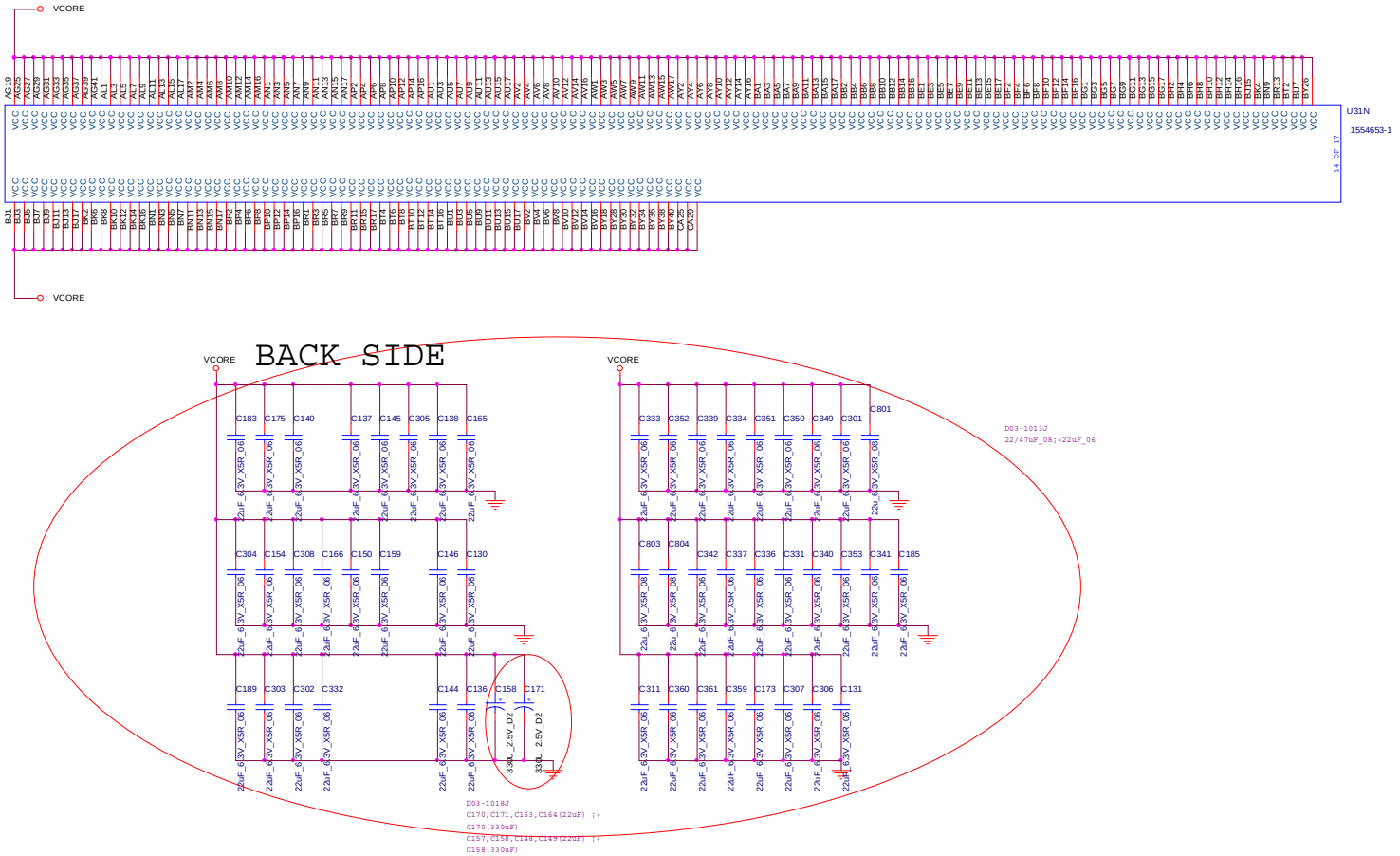
Sheet 6 of 63
Sandy Bridge - PEG & DMI

Sandy Bridge - PEG

Sheet 7 of 63
Sandy Bridge - PEG



Sandy Bridge - N-Power



Sheet 8 of 63
Sandy Bridge - N-Power

Sandy Bridge - O-Power

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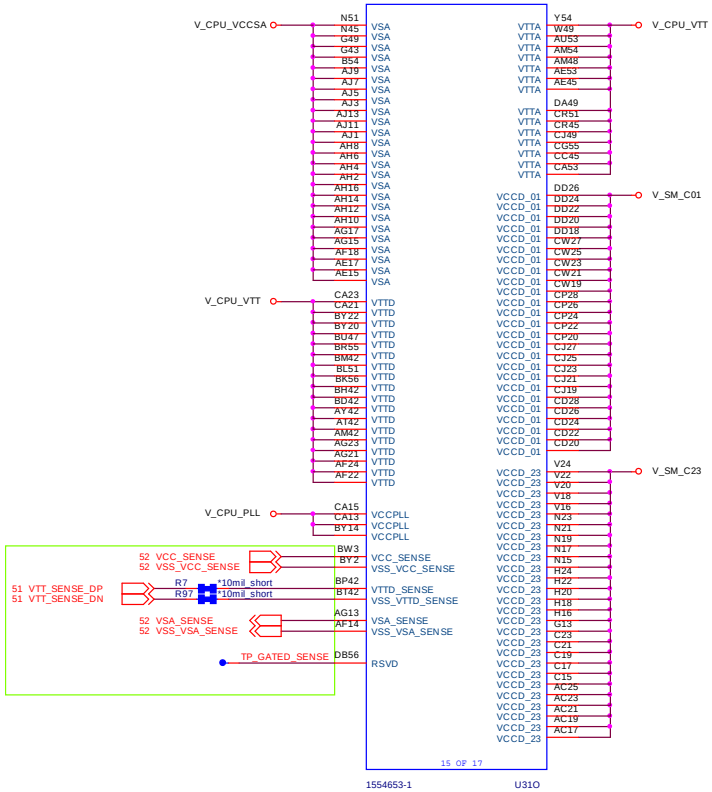
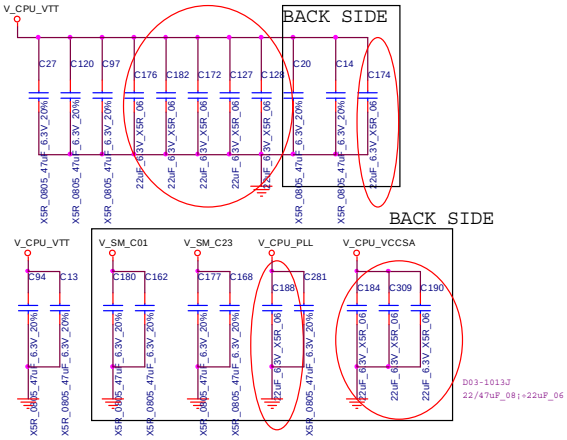
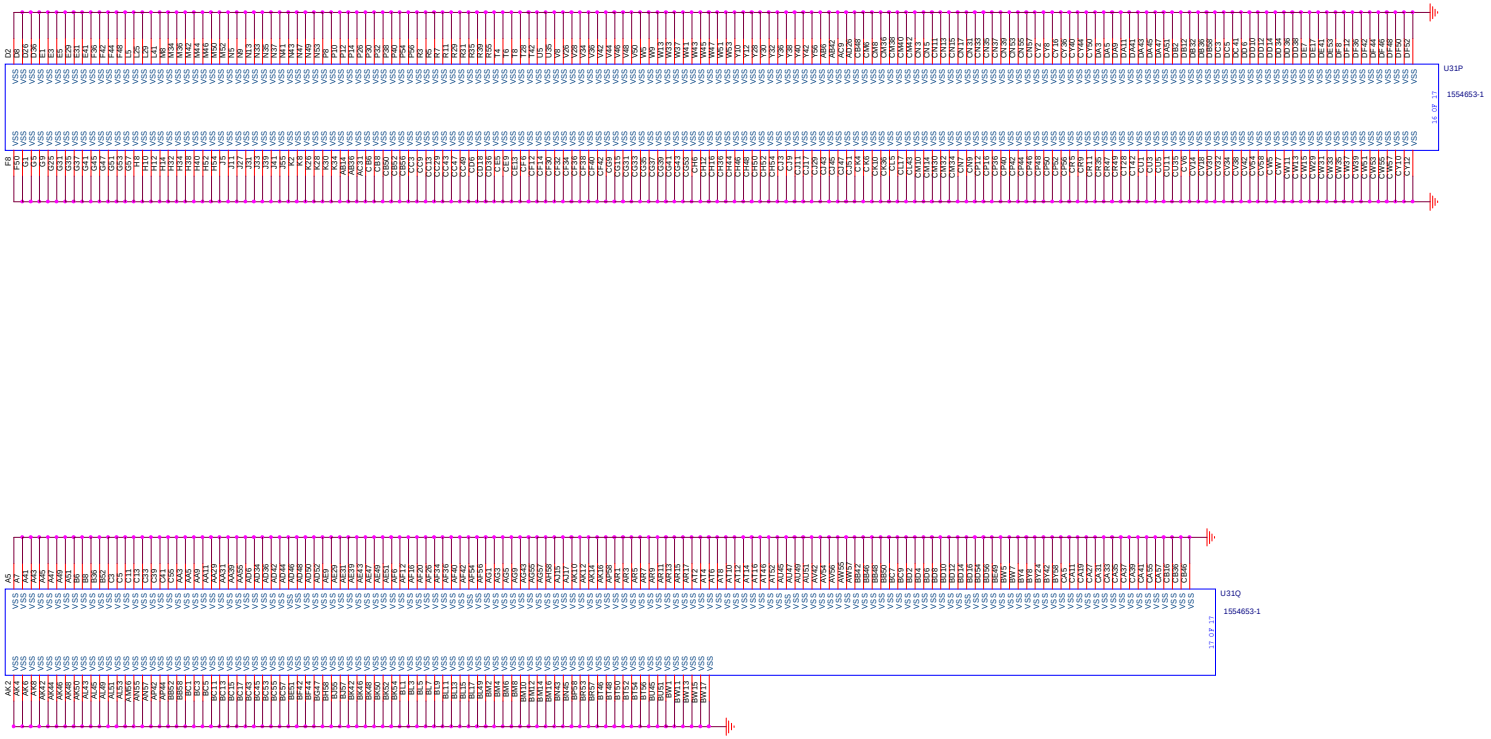
Sandy Bridge - O-Power





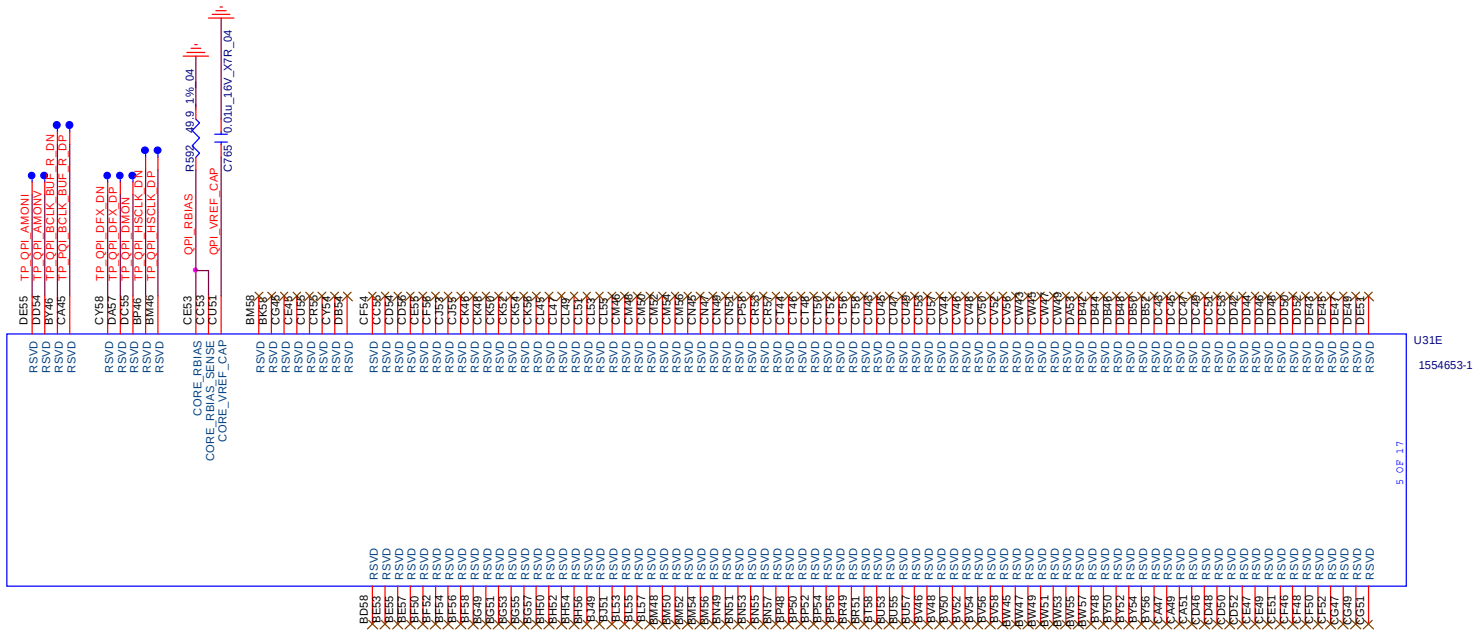
Sandy Bridge - VSS



Sheet 10 of 63
Sandy Bridge - VSS

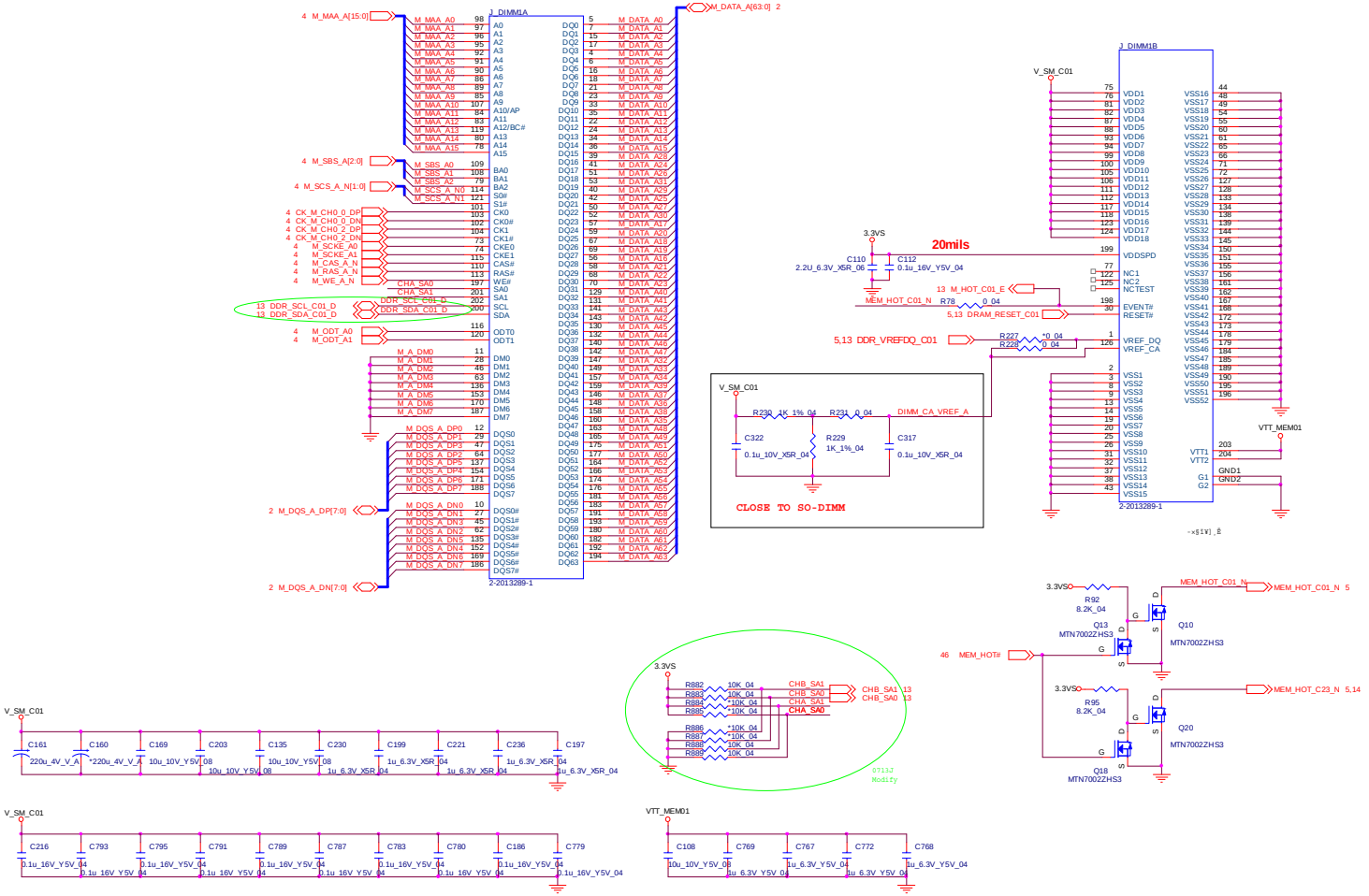
Sandy Bridge - QPI

Sheet 11 of 63
Sandy Bridge - QPI



DDR3 CHA SO-DIMM 0

Channel A SO-DIMM 0

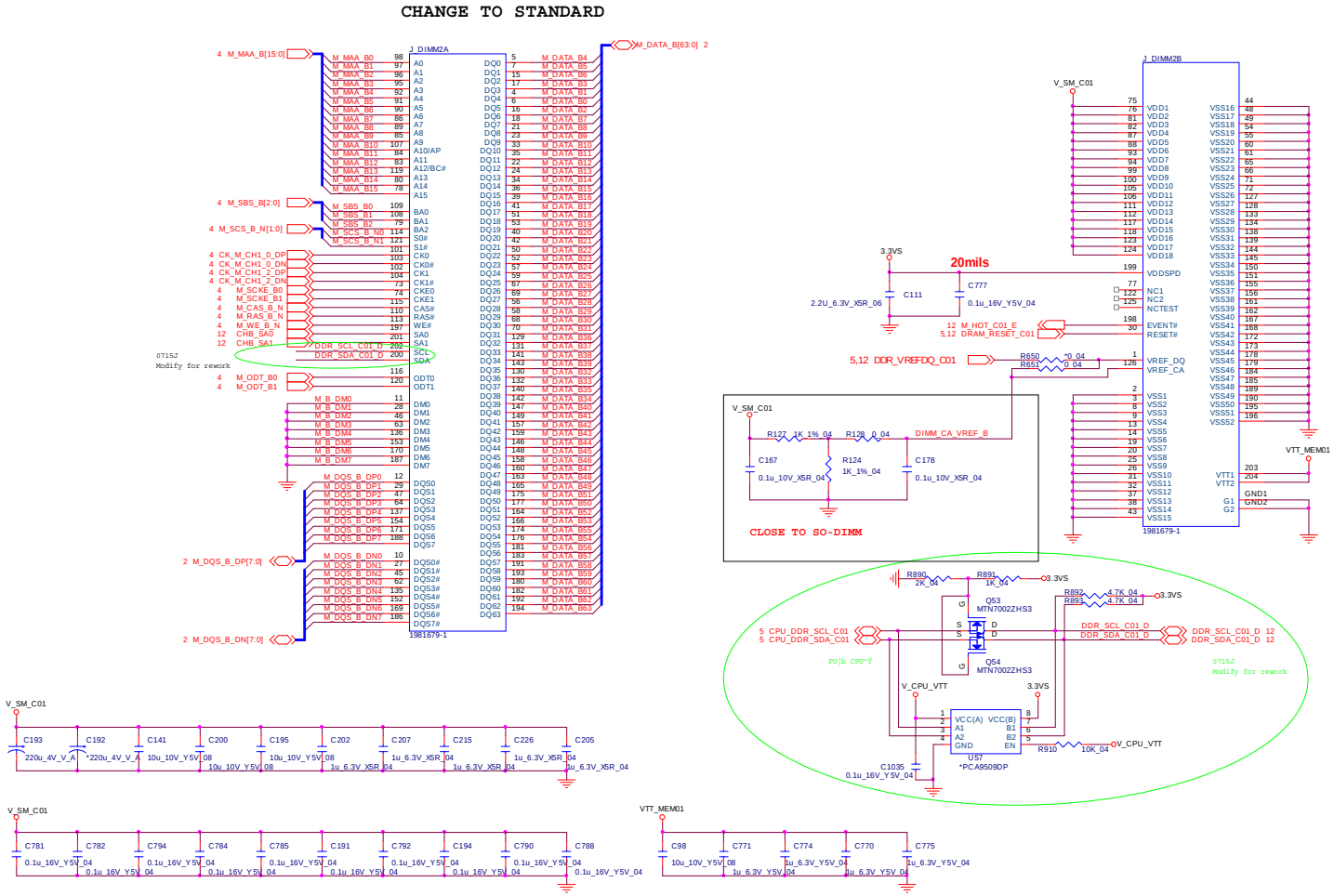


Sheet 12 of 63
DDR3 CHA
SO-DIMM 0

DDR3 CHB SO-DIMM 1

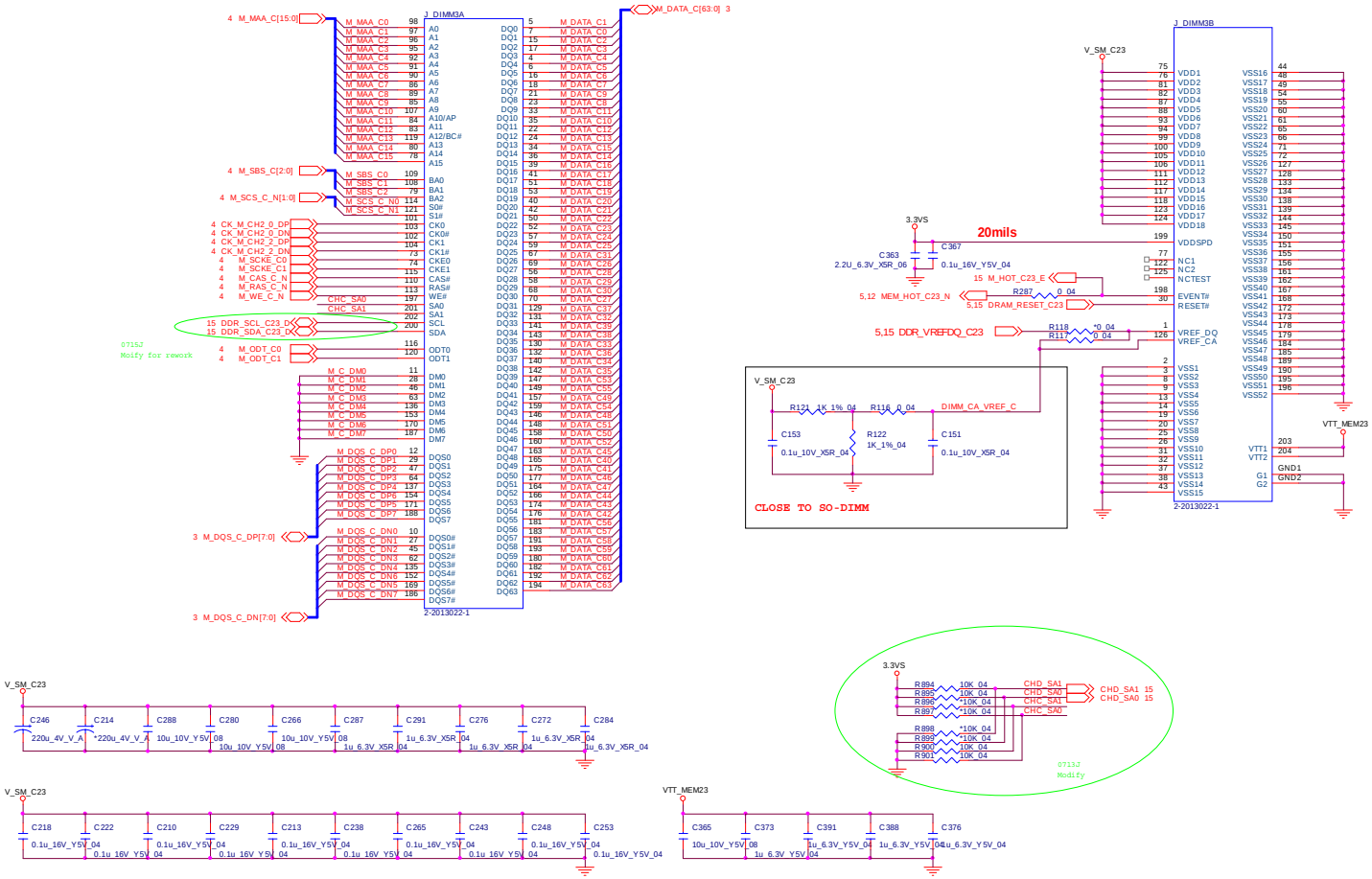
Channel B SO-DIMM 1

Sheet 13 of 63
DDR3 CHB
SO-DIMM 1



DDR3 CHC SO-DIMM 2

Channel C SO-DIMM 2



Sheet 14 of 63
DDR3 CHC
SO-DIMM 2

B.Schematic Diagrams

DDR3 CHD SO-DIMM 3

Channel D SO-DIMM 3

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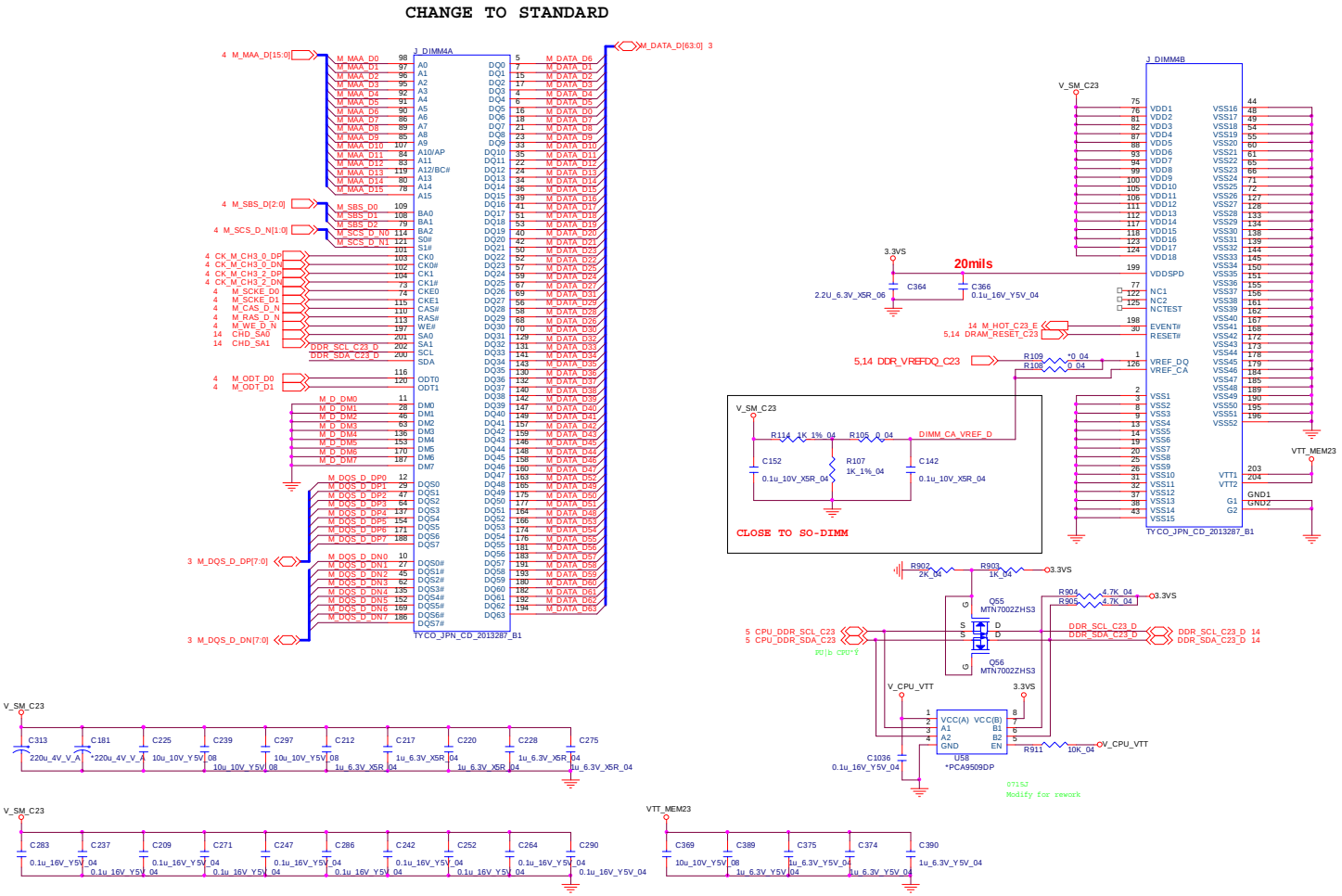
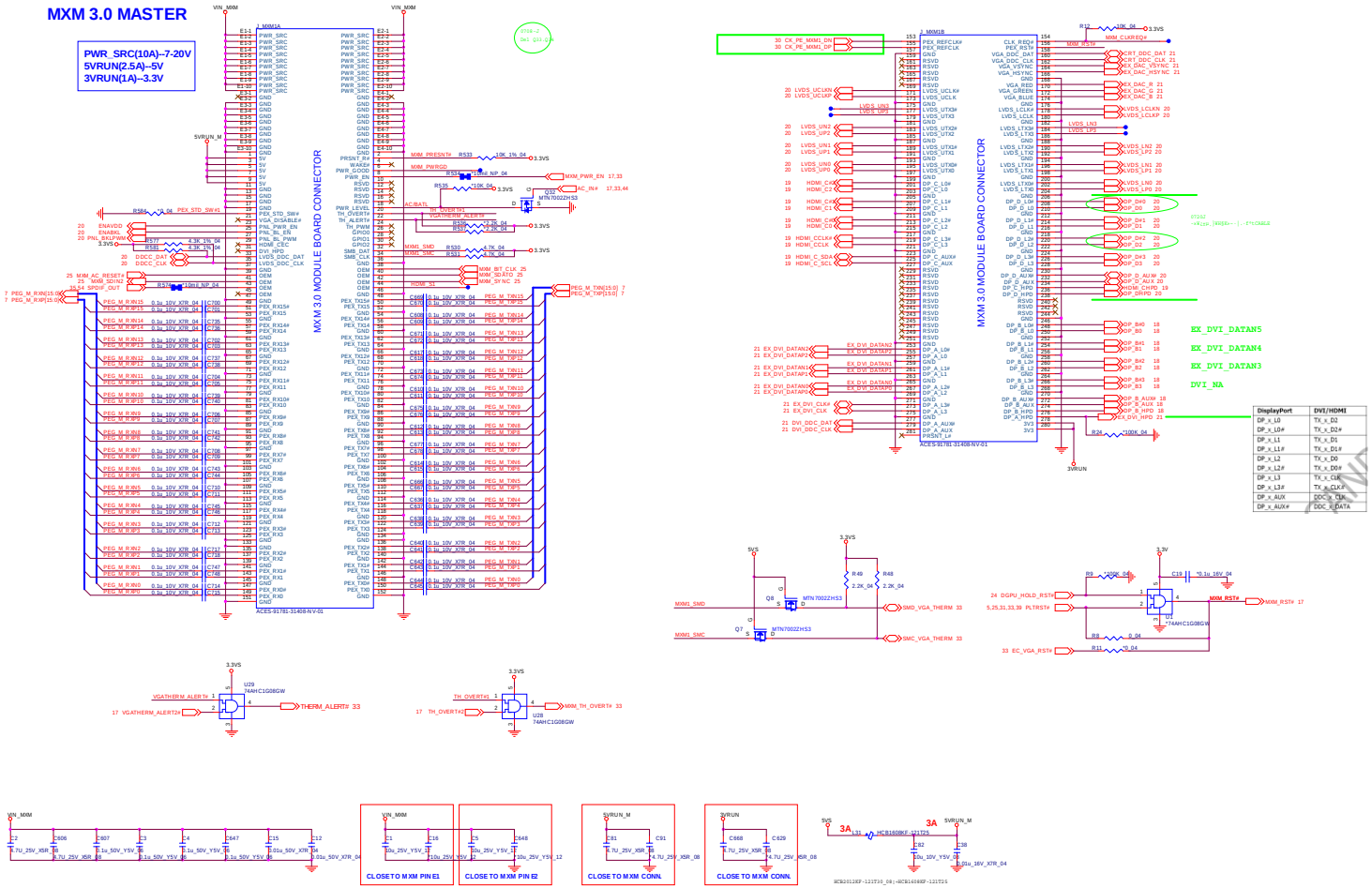
PCH 1/8
DDR3 CHD
SO-DIMM 3



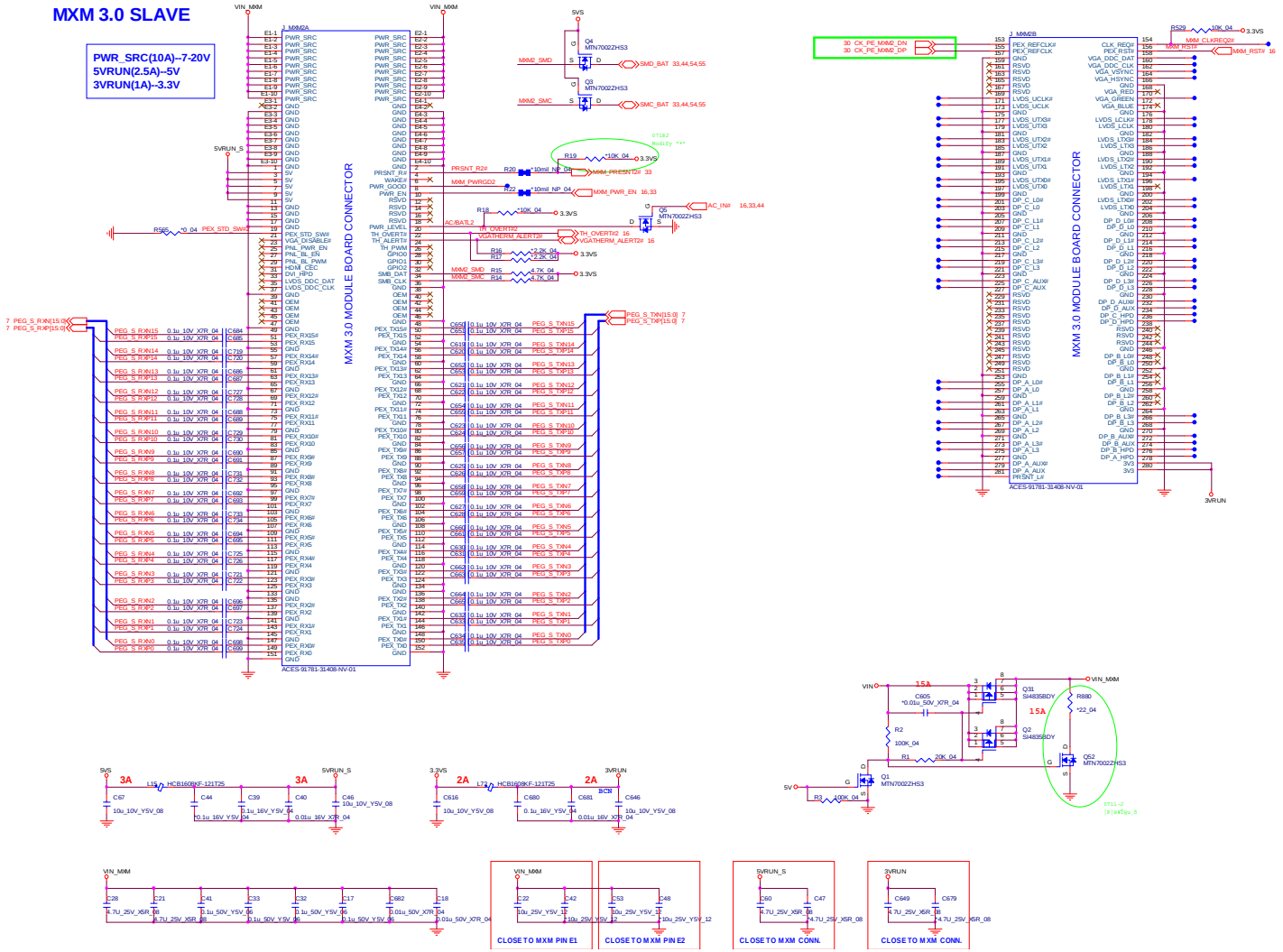
MXM 3.0 PCI-E MASTER



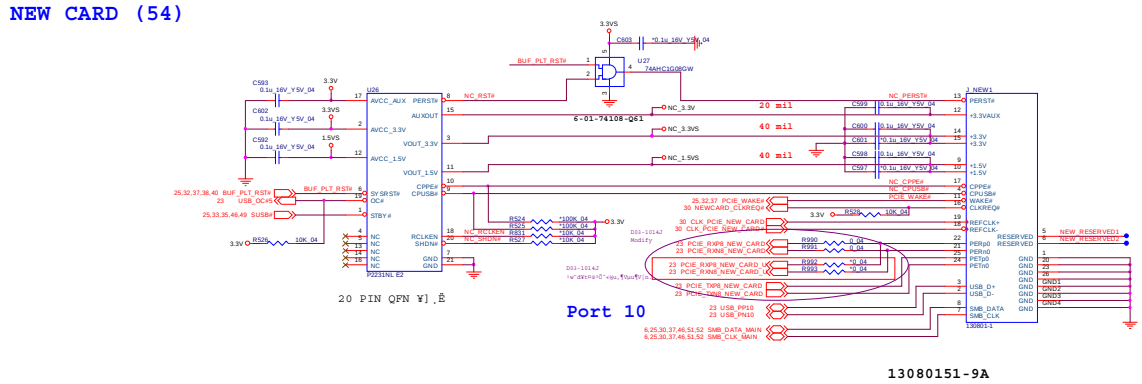
Sheet 16 of 63
MXM 3.0 PCI-E MASTER

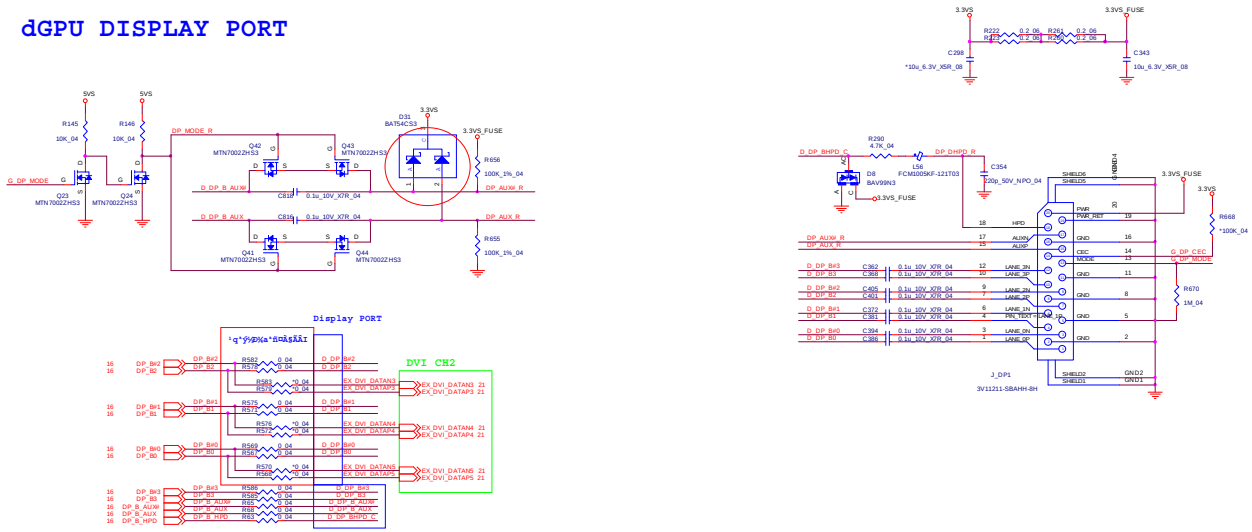
MXM 3.0 PCI-E SLAVE

Sheet 17 of 63
MXM 3.0 PCI-E SLAVE



Display Port, New Card

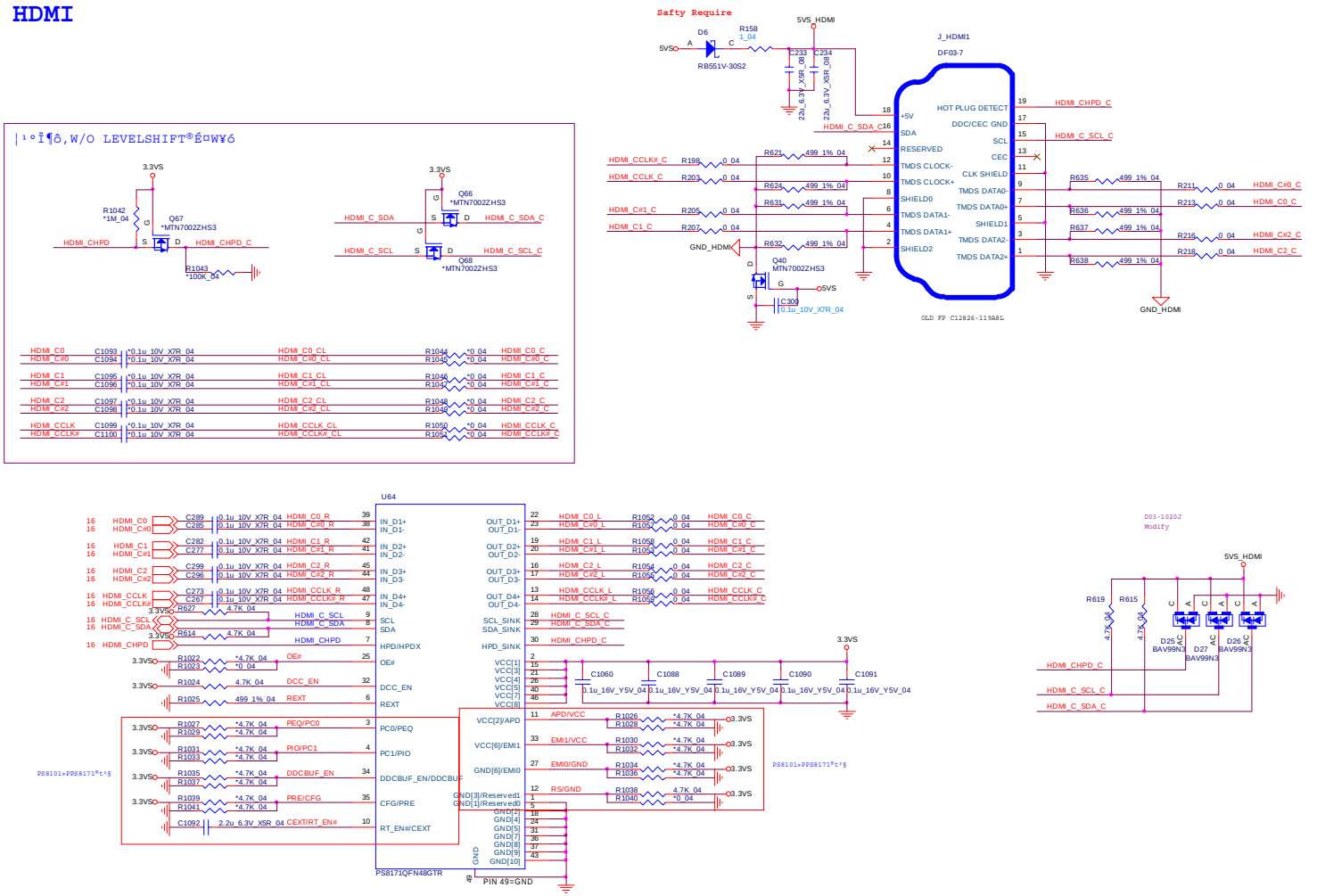




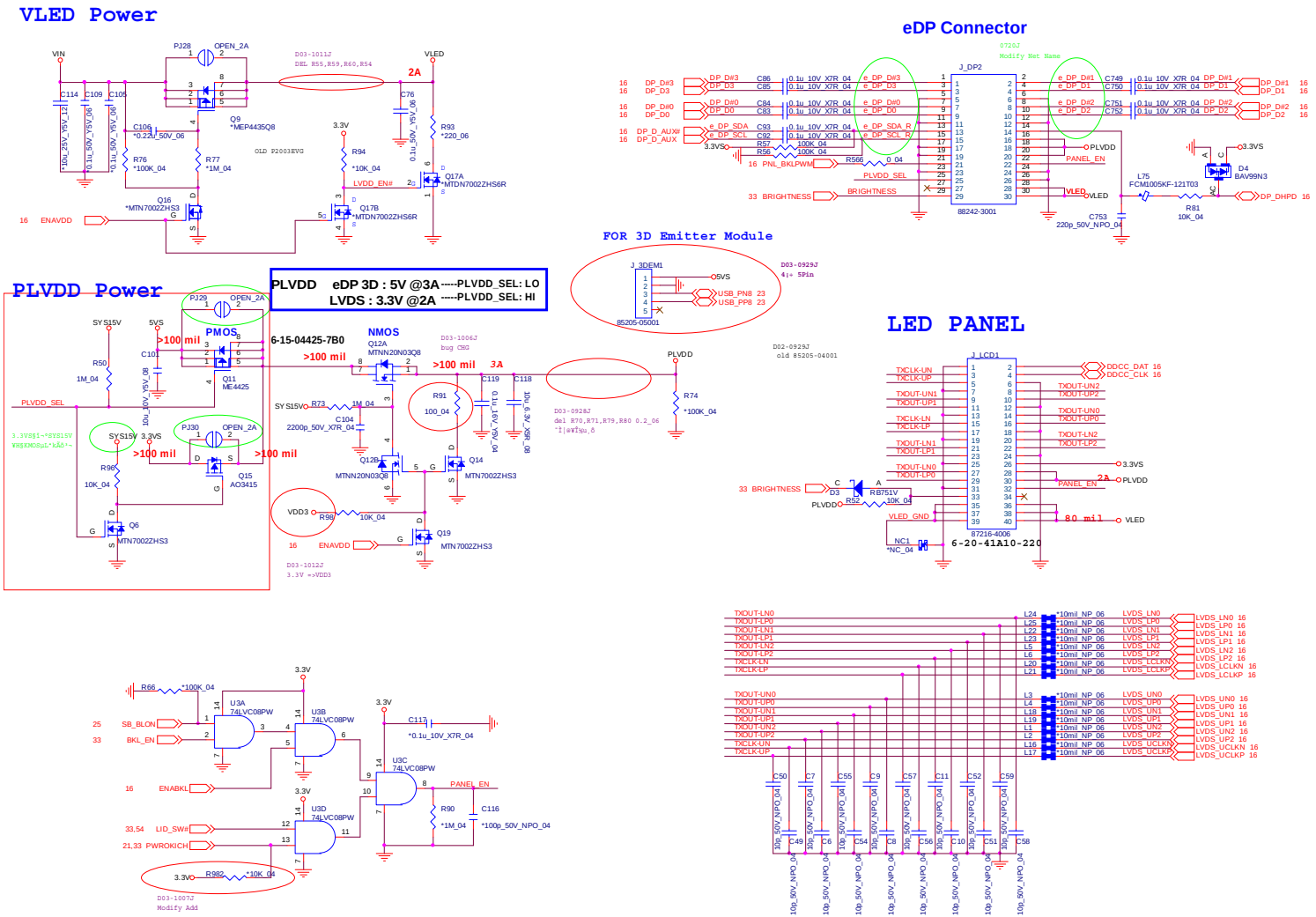
Sheet 18 of 63
Display Port, New Card

HDMI

Sheet 19 of 63
HDMI



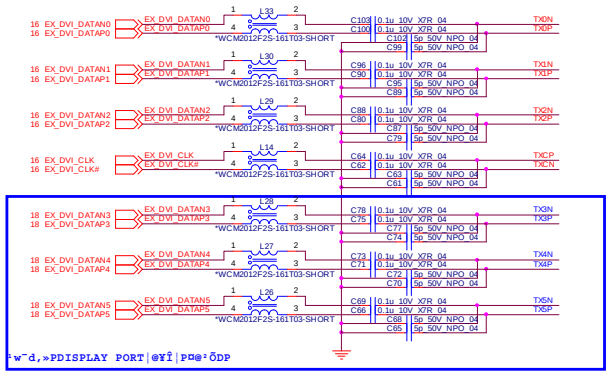
LCD, eDP, 3D Emitter

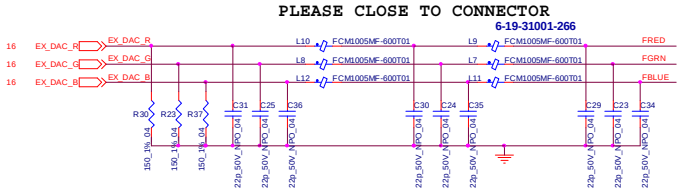


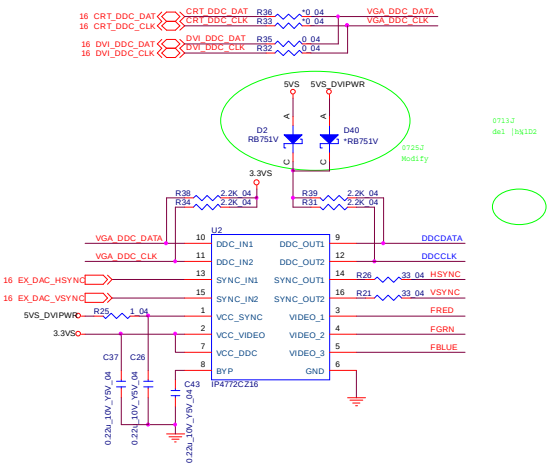
Sheet 20 of 63
LCD, eDP,
3D Emitter

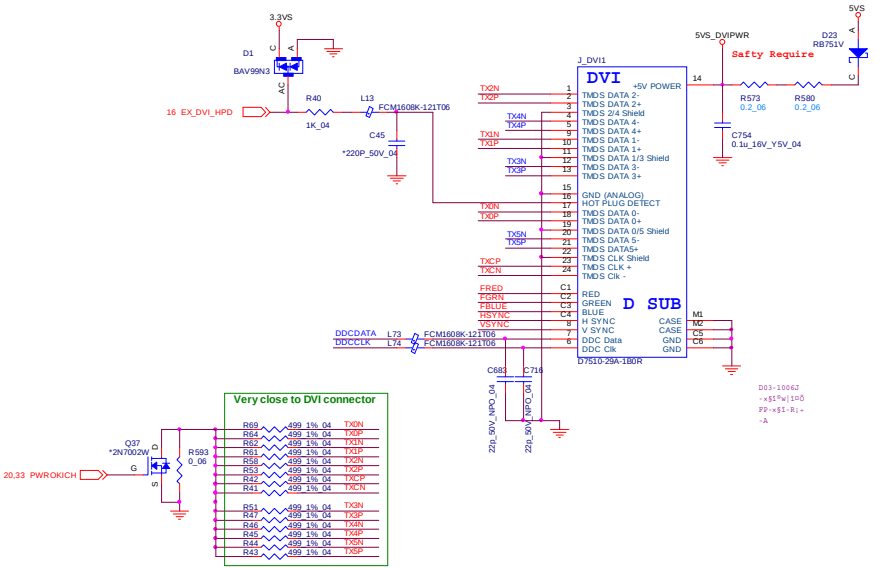
DVI

Sheet 21 of 63
DVI

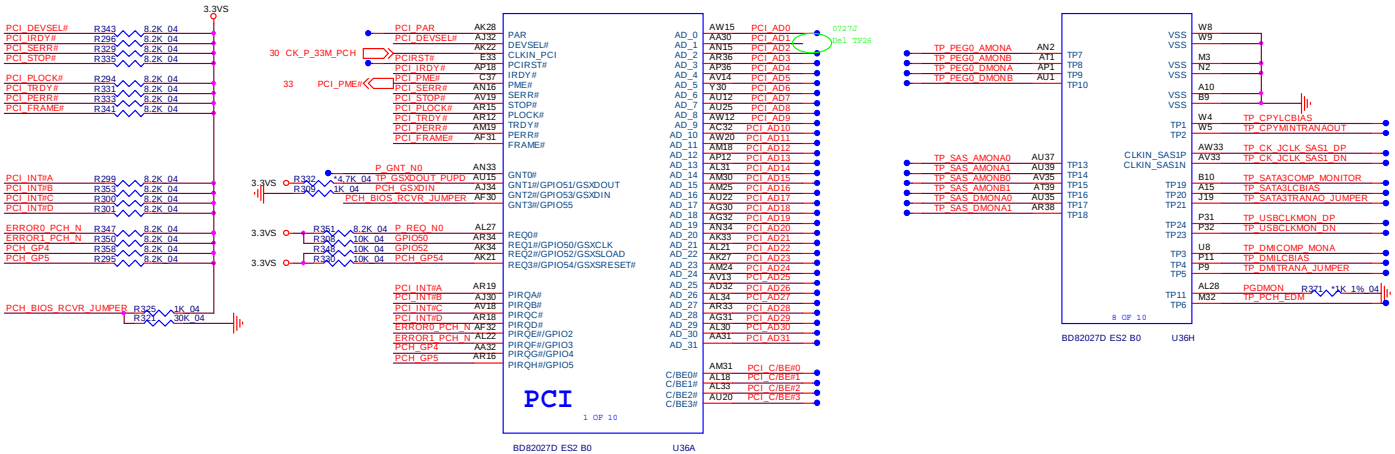








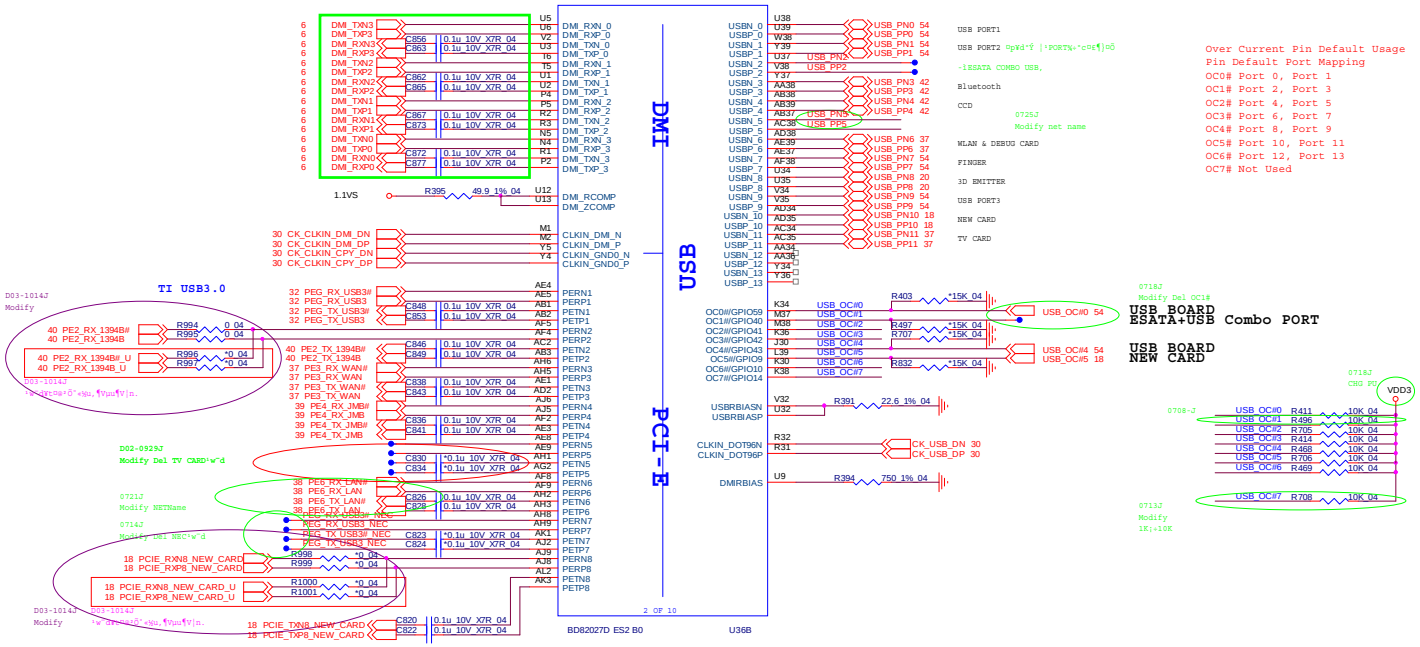
PCH PCI



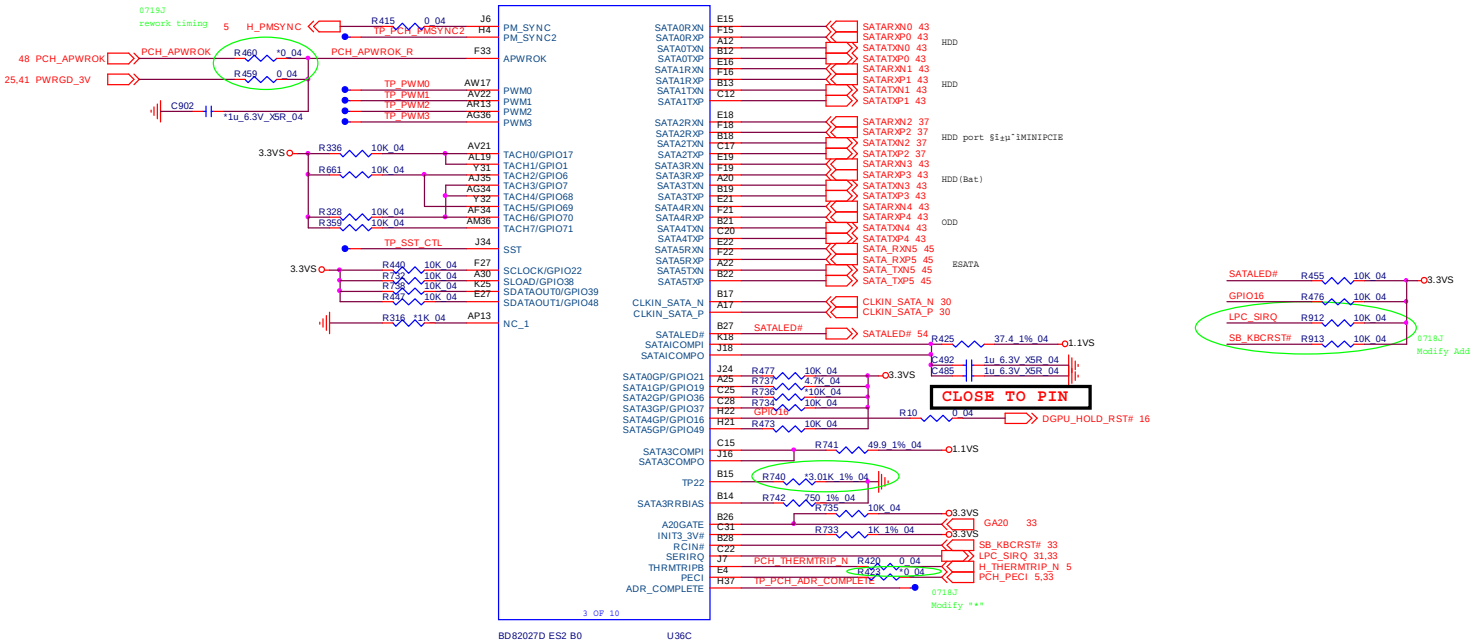
Sheet 22 of 63
PCH PCI

PCH USB/PCIE/DMI

Sheet 23 of 63
PCH USB/PCIE/DMI



PCH SATA



Sheet 24 of 63
PCH SATA

B.Schematic Diagrams

PCH GPIO/HDA

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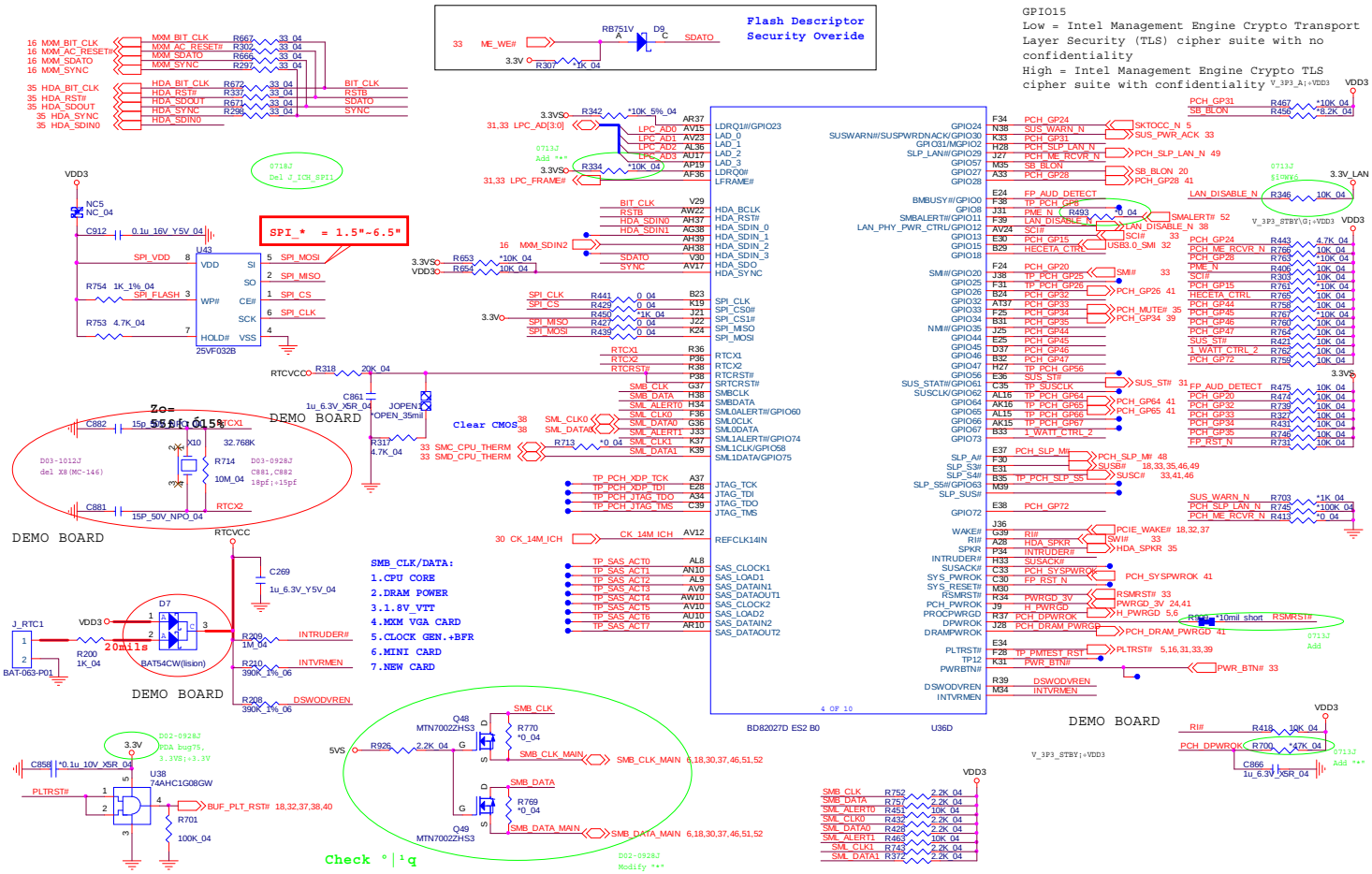
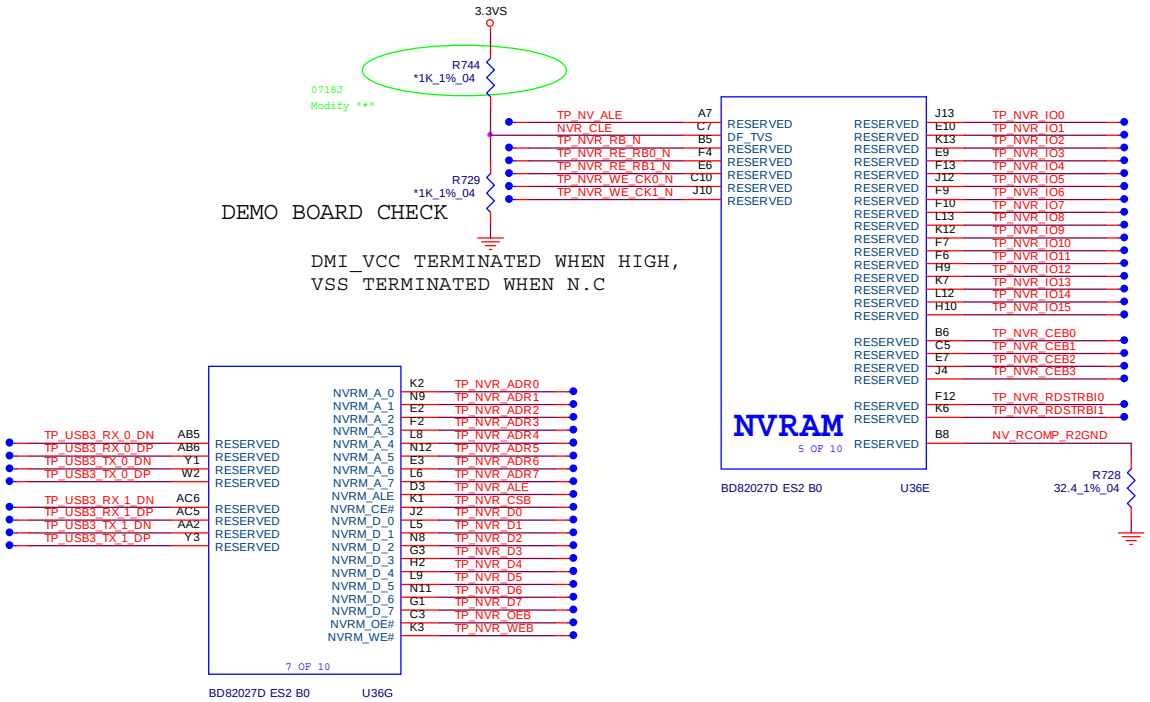
PCH GPIO/HDA



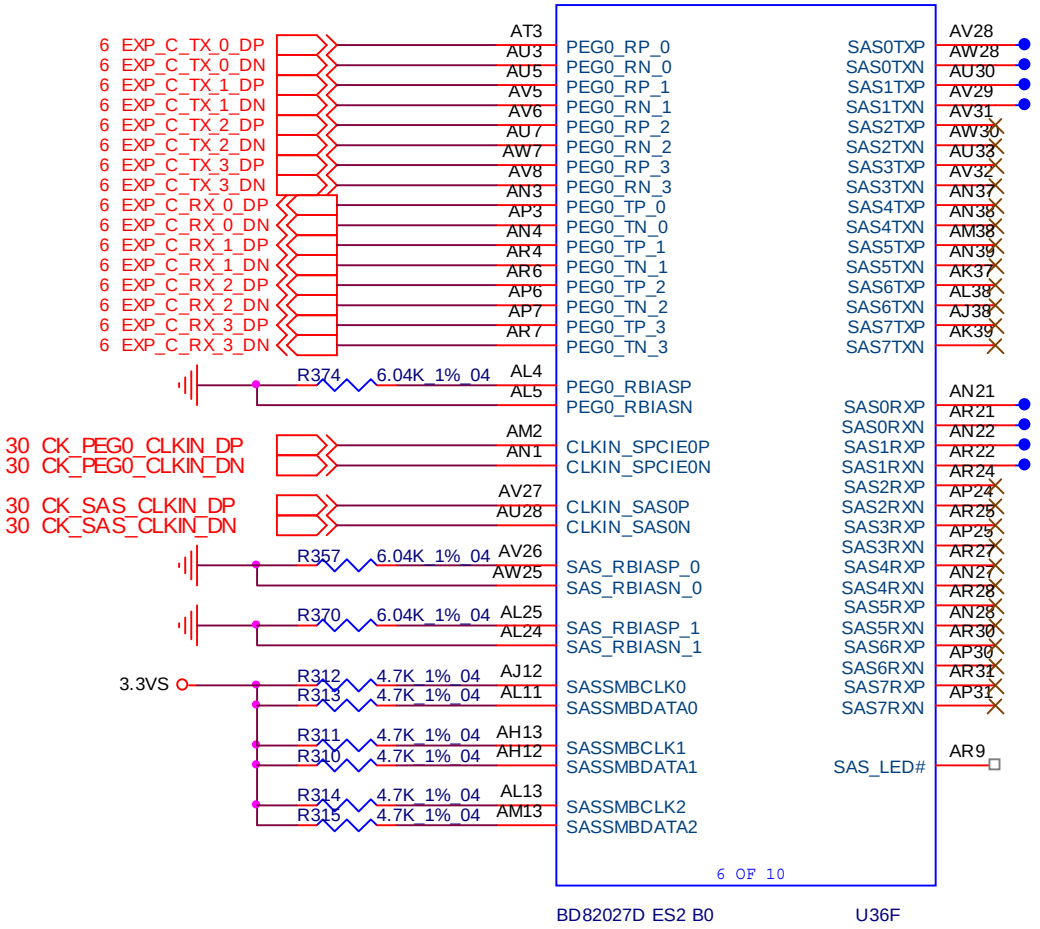
PCH NVRAM



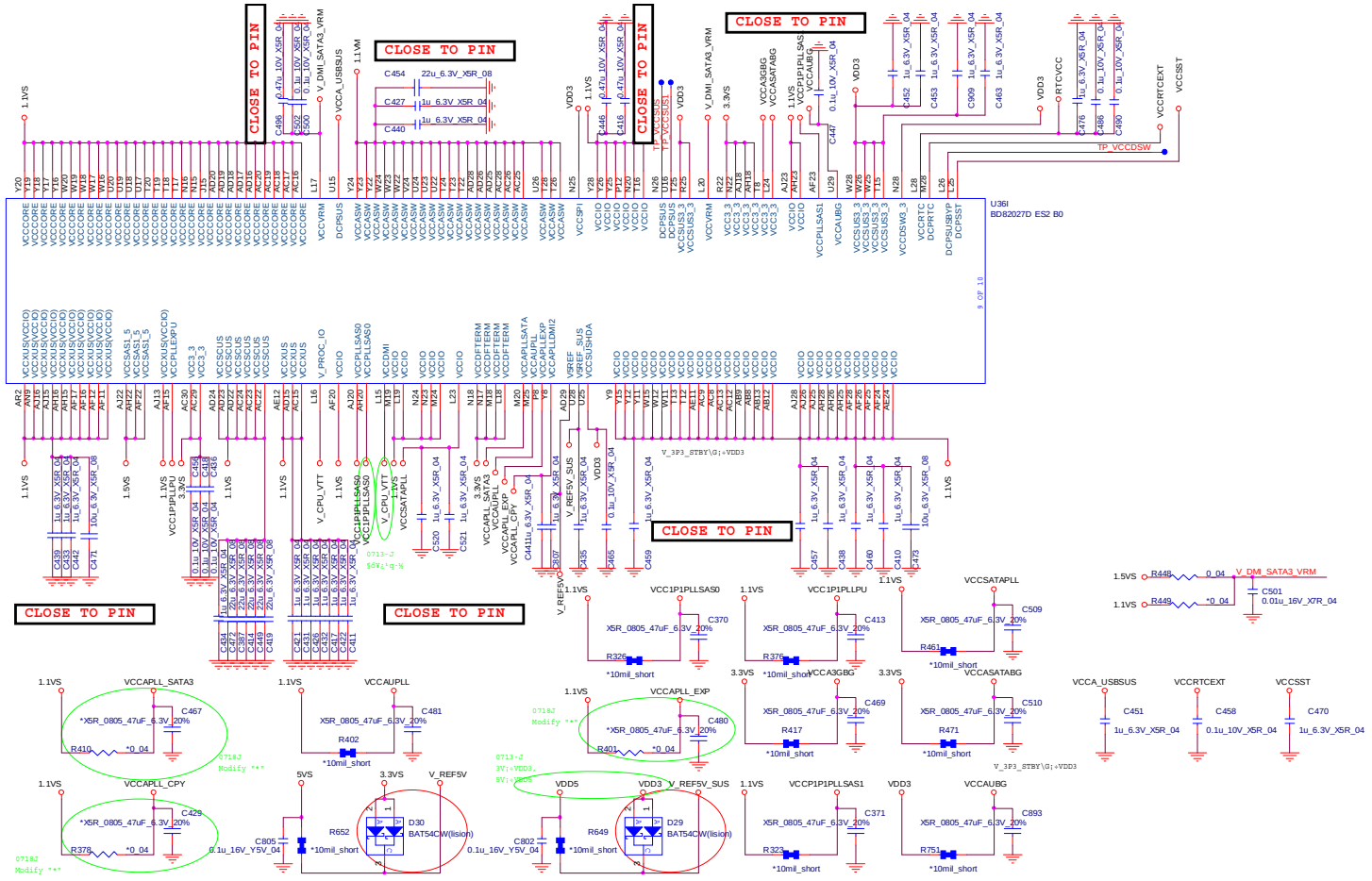
Sheet 26 of 63
PCH NVRAM

PCH SAS

Sheet 27 of 63
PCH SAS



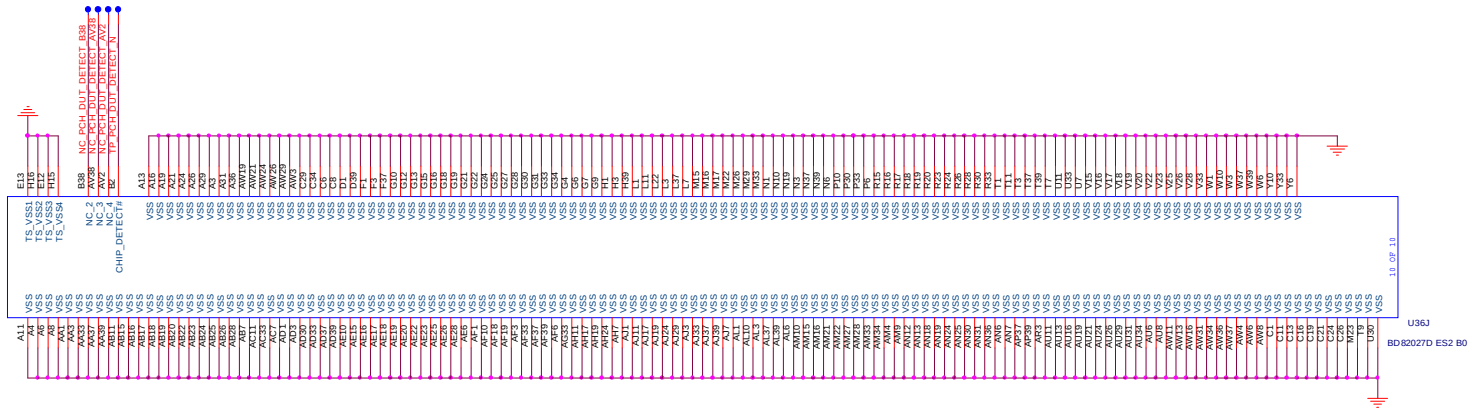
PCH Power



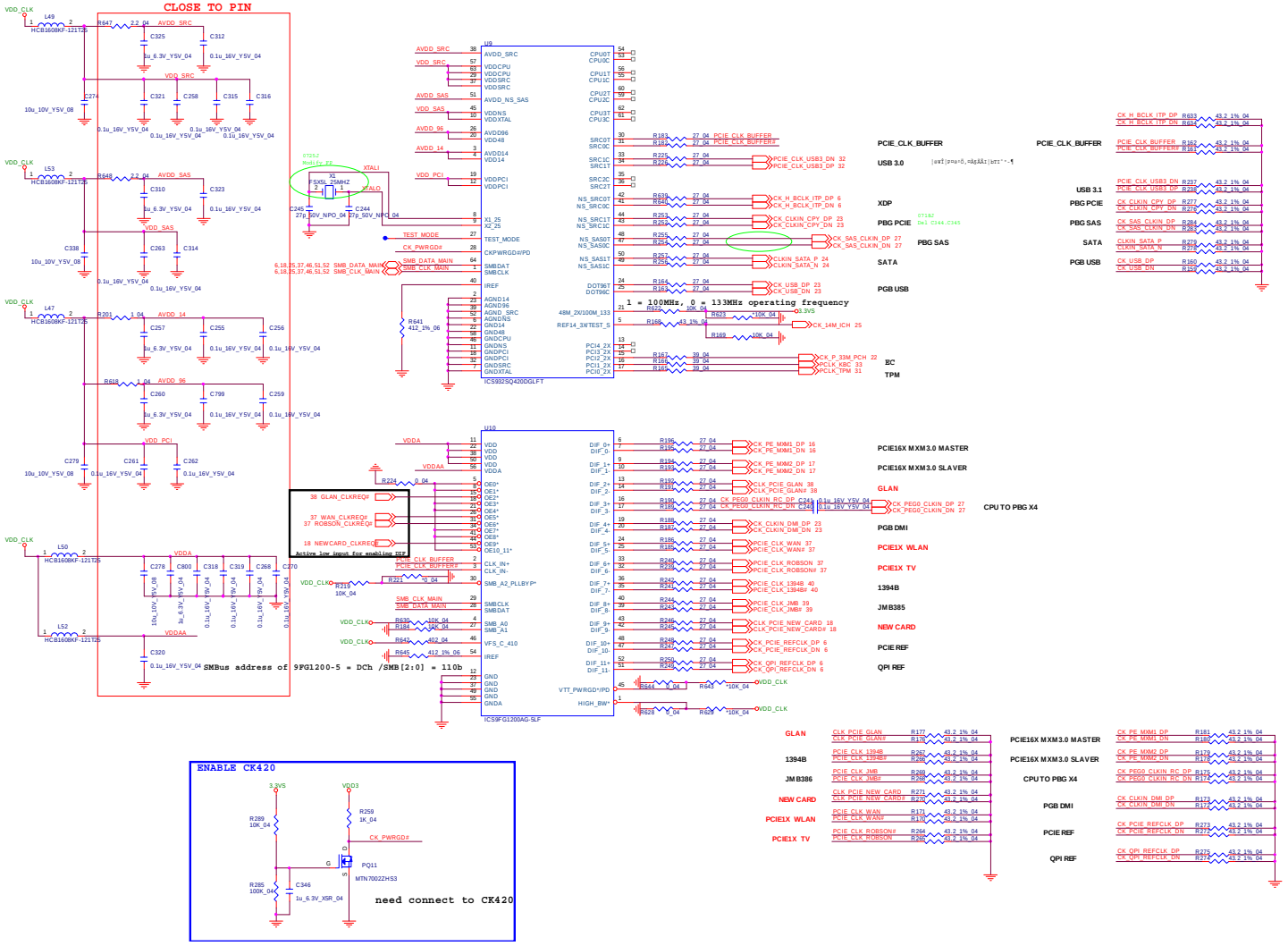
Sheet 28 of 63
PCH Power

PCH GND

Sheet 29 of 63
PCH GND



Clock Generator, Buffer


CLOSE TO PIN
SMBus address of 9FG1200-5 = DCh /SMB[2:0] = 110b
1 = 100MHz, 0 = 133MHz operating frequency
ENABLE CK420
need connect to CK420

Sheet 30 of 63
Clock Generator, Buffer

TPM 1.2

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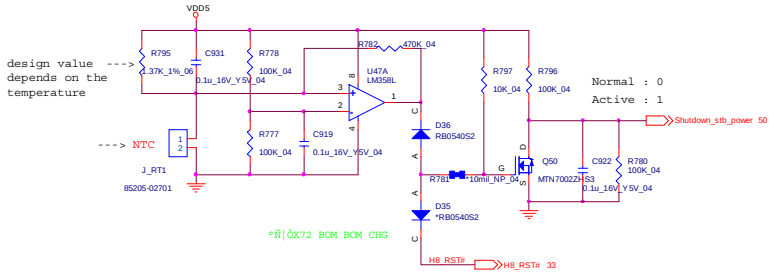
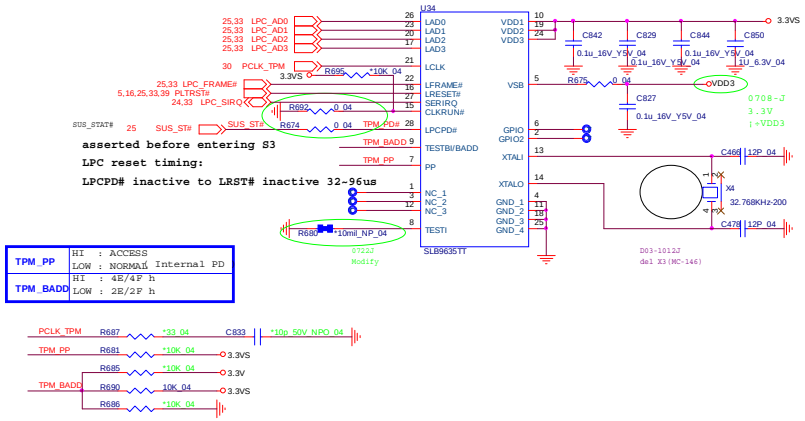
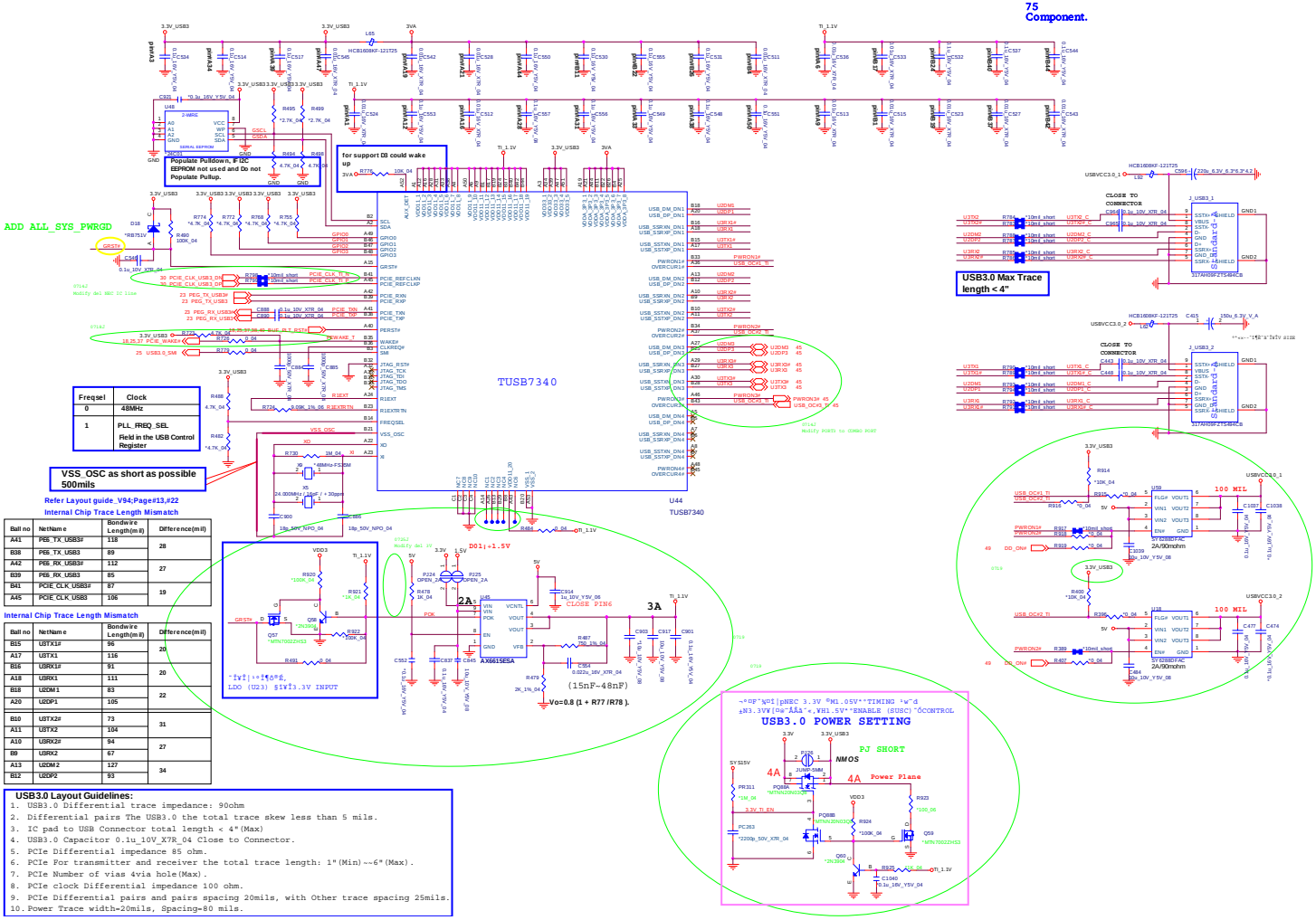
TPM 1.2



TPM 1.2



USB 3.0


75
Component.
TUSB7340
U44
TUSB7340
ADD ALL_SYS_PWRGD
for support D3 could wake up
Populate Pulldown, if I2C EEPROM not used and Do not Populate Pullup.
USB3.0 Max Trace length < 4"
CLOSE TO CONNECTOR
VSS_OSC as short as possible 500mils
Refer Layout guide_V94;Page#13,#22
Internal Chip Trace Length Mismatch
Internal Chip Trace Length Mismatch
USB3.0 Layout Guidelines:
1. USB3.0 Differential trace impedance: 90ohm
2. Differential pairs The USB3.0 the total trace skew less than 5 mils.
3. IC pad to USB Connector total length < 4"(Max)
4. USB3.0 Capacitor 0.1u_10V_X7R_04 Close to Connector.
5. PCIe Differential impedance 85 ohm.
6. PCIe For transmitter and receiver the total trace length: 1"(Min)~~6"(Max).
7. PCIe Number of vias 4via hole(Max).
8. PCIe clock Differential impedance 100 ohm.
9. PCIe Differential pairs and pairs spacing 20mils, with Other trace spacing 25mils.
10. Power Trace width-20mils, Spacing-80 mils.
USB3.0 POWER SETTING
PJ SHORT
NMOS
Power Plane
LDO (U23) $1¥I3.3V INPUT
(15nF~48nF)
Vo=0.8 (1 + R77 /R78).

Freqsel	Clock
0	48MHz
1	PLL_FREQ_SEL Field in the USB Control Register

Ball no	NetName	Bondwire Length(mil)	Difference(mil)
A41	PEB_TX_USB3#	118	28
B38	PEB_TX_USB3	89	
A42	PEB_RX_USB3#	112	27
B39	PEB_RX_USB3	85	
B41	PCIE_CLK_USB3#	87	19
A45	PCIE_CLK_USB3	106	

Ball no	NetName	Bondwire Length(mil)	Difference(mil)
B15	U3TX1#	96	20
A17	U3TX1	116	
B16	U3RX1#	91	20
A18	U3RX1	111	
B18	U2DM1	83	22
A20	U2DP1	105	
B10	U3TX2#	73	31
A11	U3TX2	104	
A10	U3RX2#	94	27
B9	U3RX2	67	
A13	U2DM2	127	34
B12	U2DP2	93	

EC ITE8519

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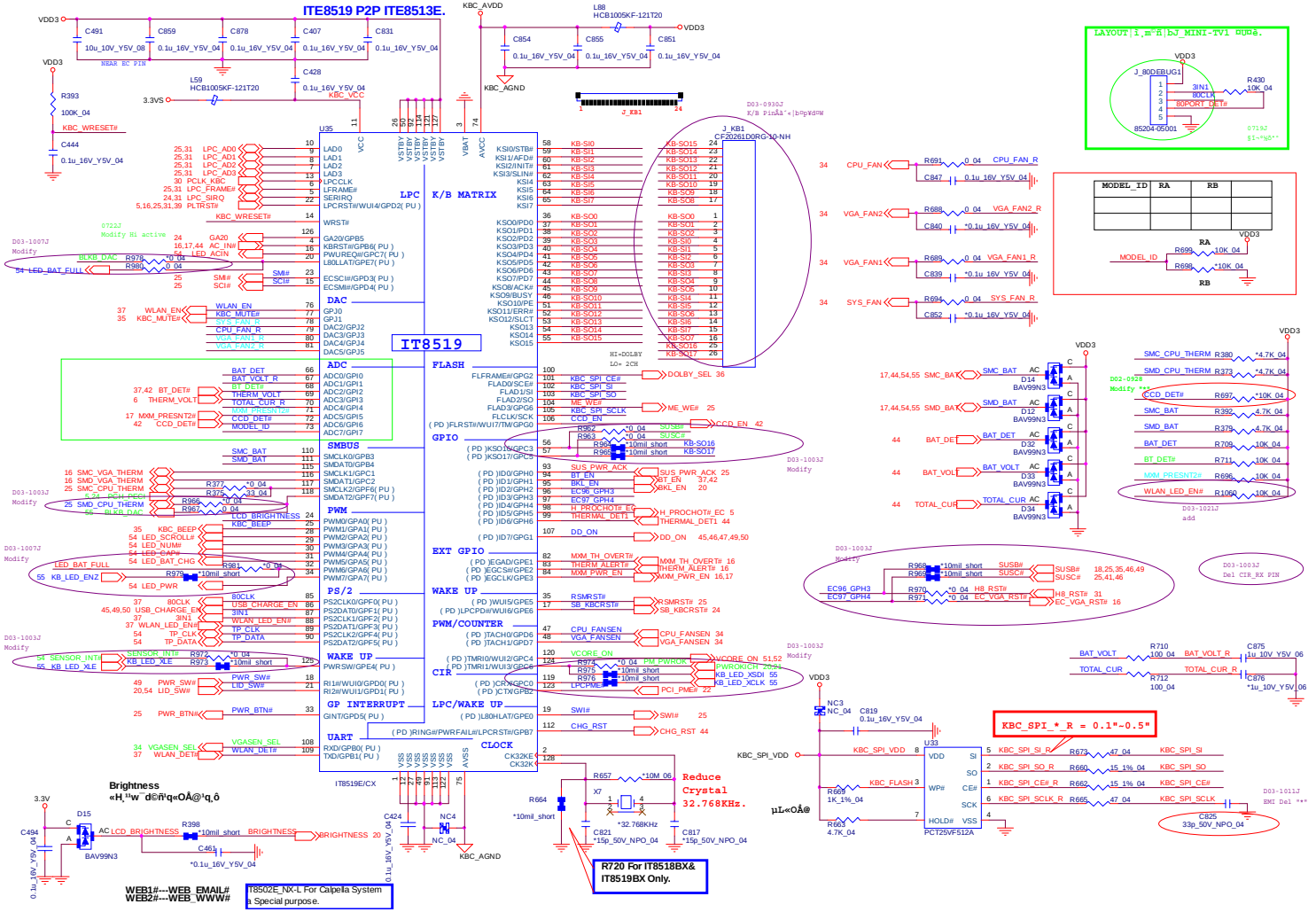
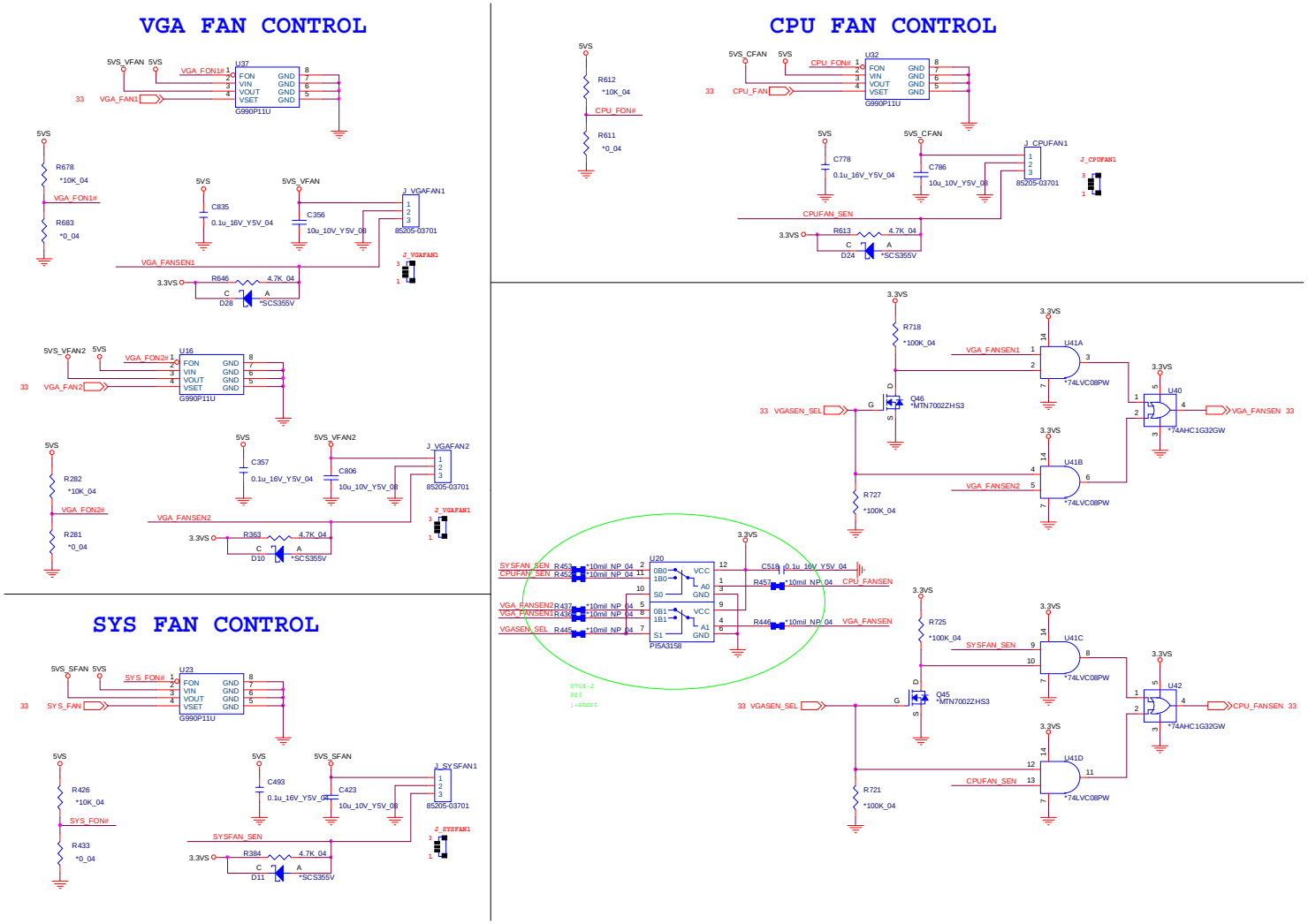
EC ITE8519



Fan Control



Sheet 34 of 63
Fan Control

Audio Codec ALC892, DMIC

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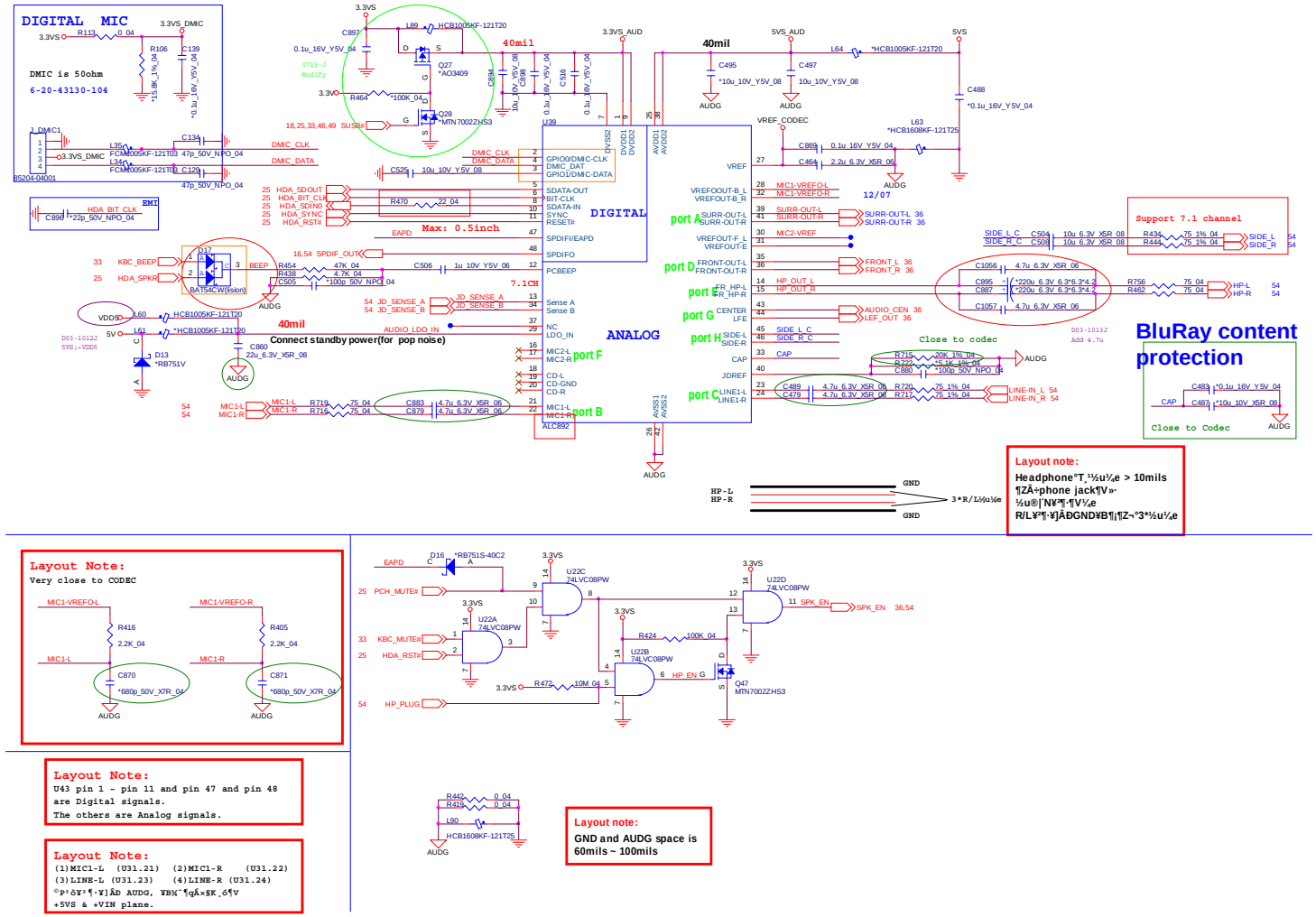
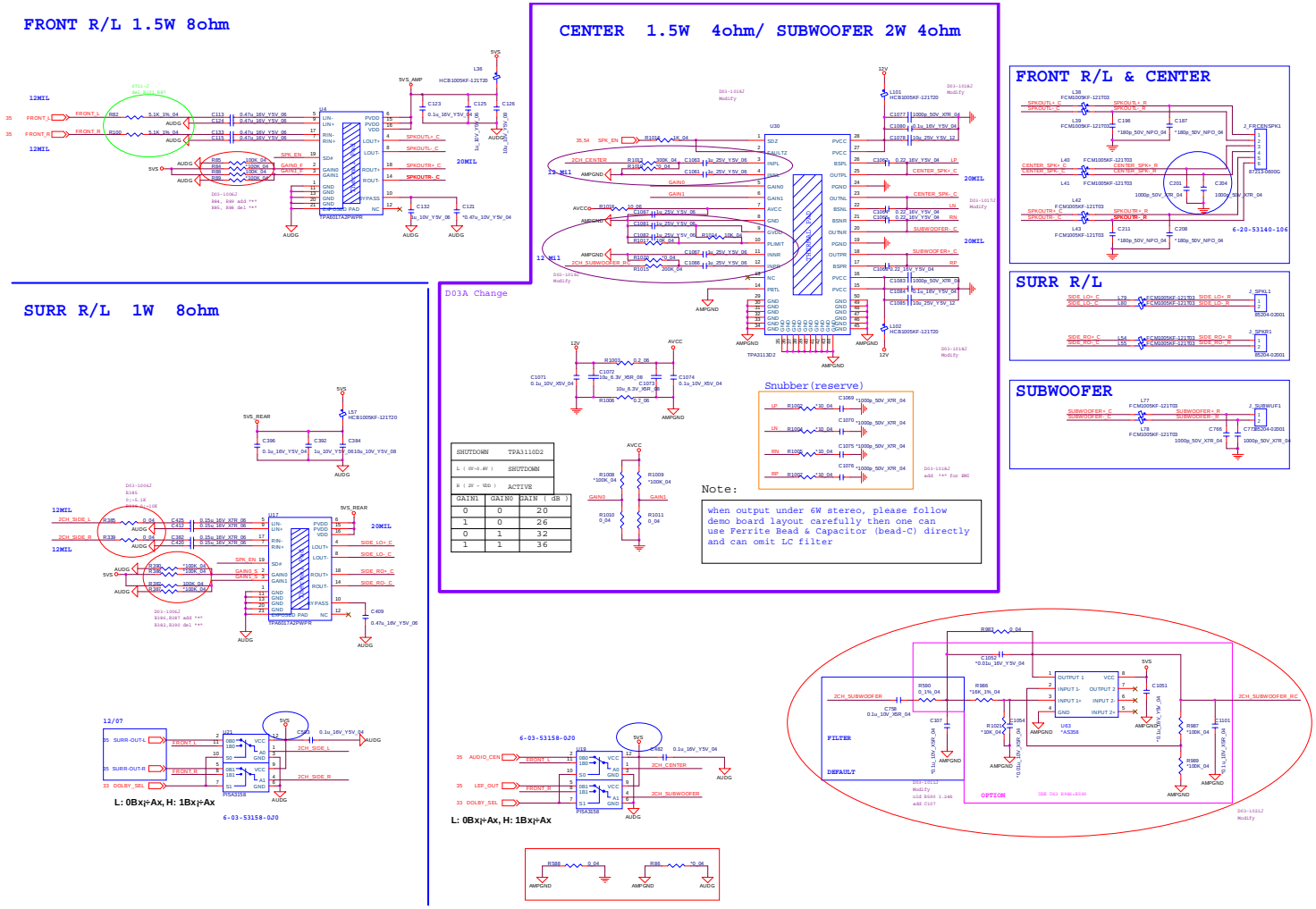
Audio Codec
ALC892, DMIC



Audio AMP



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Audio AMP

WLAN, TV Card

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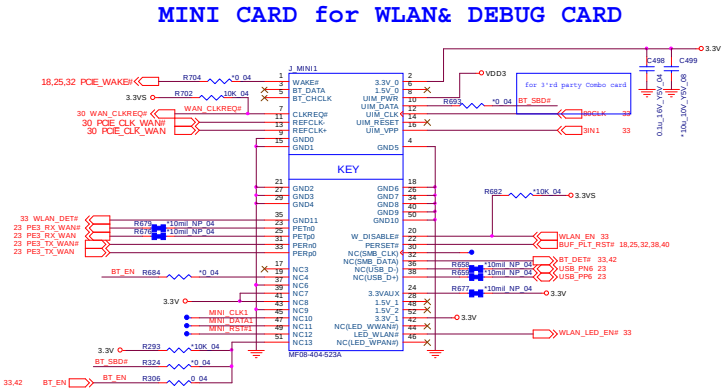
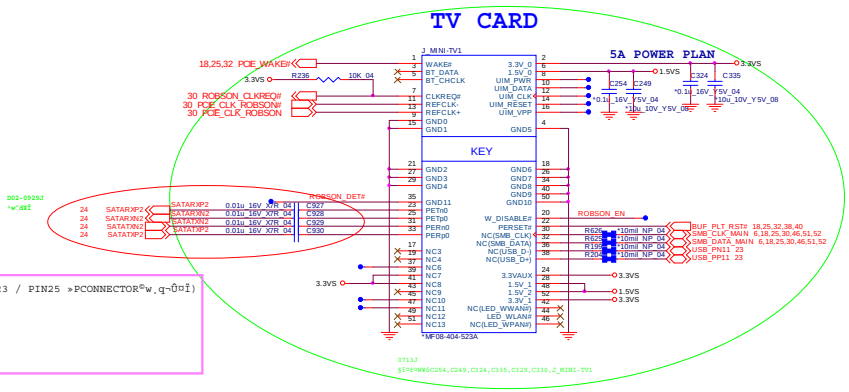
WLAN, TV Card

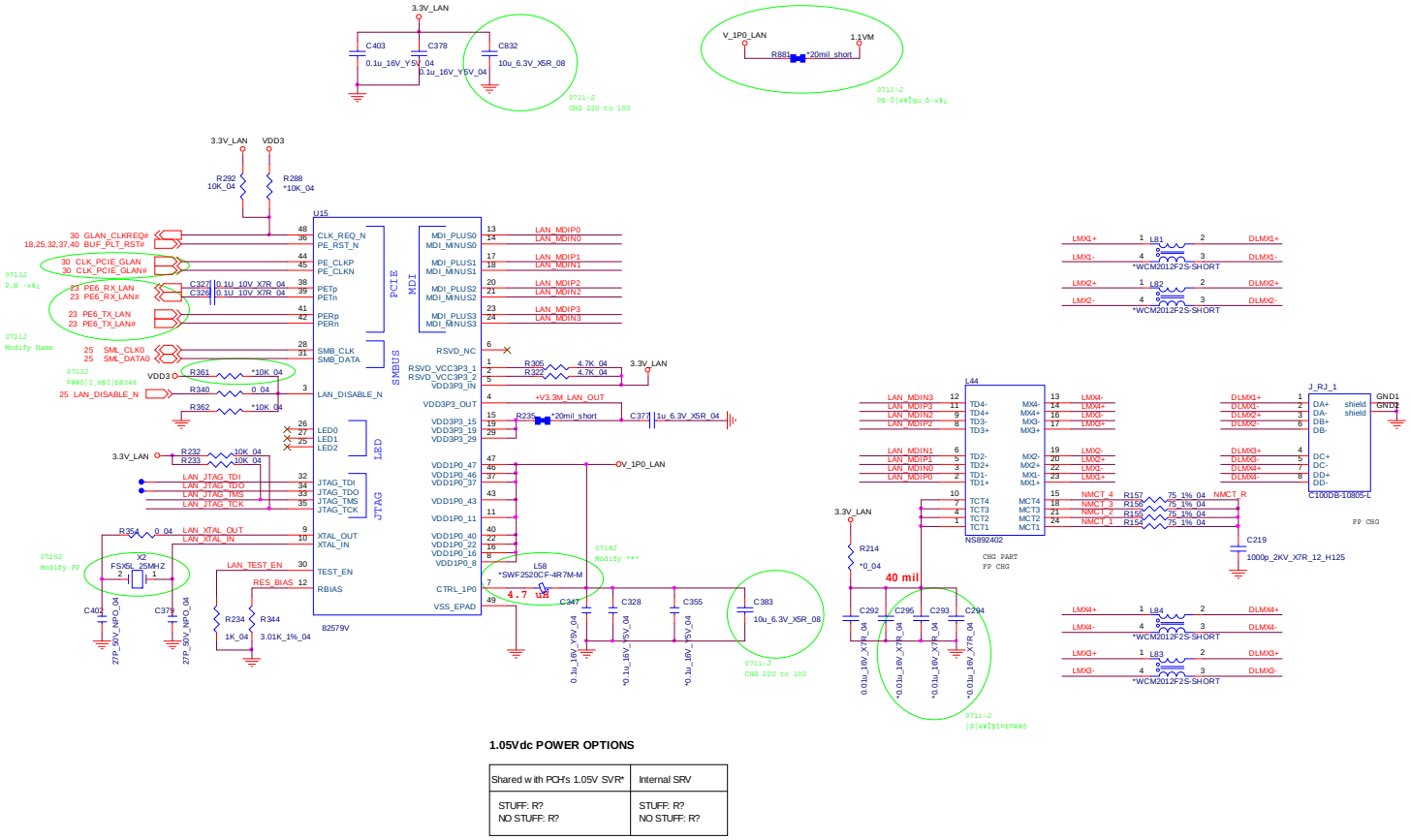




MSATA CARD PIN DEPINE (PIN23 / PIN25 »PCONNECTOR©w.q¬ÛuÏ)

33	PERp0	34	GND
31	PERn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PETn0	26	GND
23	PETp0	24	+3.3Vaux

LAN PHY Intel 82579V



1.05Vdc POWER OPTIONS

Shared with PCH's 1.05V SVR*	Internal SRV
STUFF: R? NO STUFF: R?	STUFF: R? NO STUFF: R?

***NOTE: 1.05Vdc can be shared from PCH's 1.05V SVR (typically the ME rail). When sharing, make sure both +3.3V_LAN & 1.05Vdc rails are remained powered on during ALL Sx states, as required to support WOL.**

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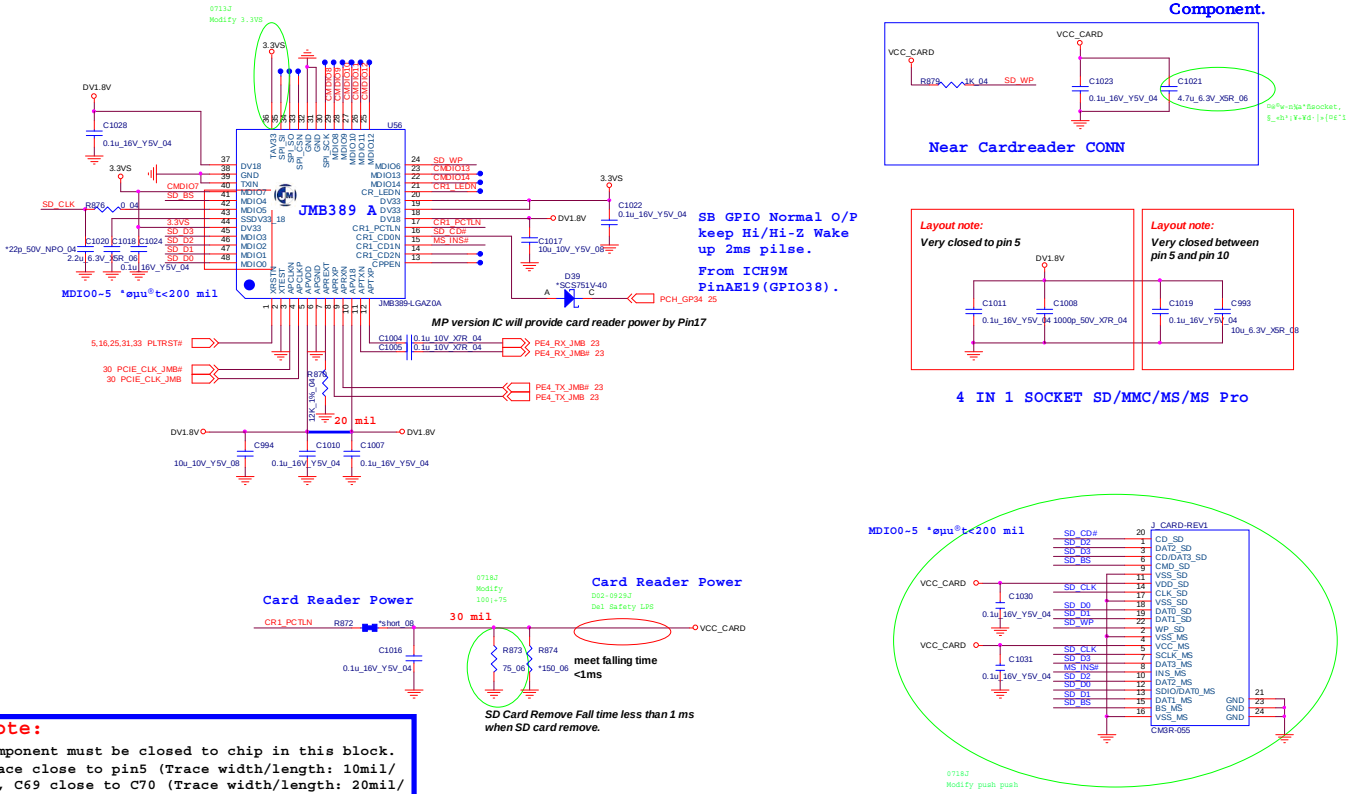
LAN PHY Intel 82579V

Card Reader JMB389

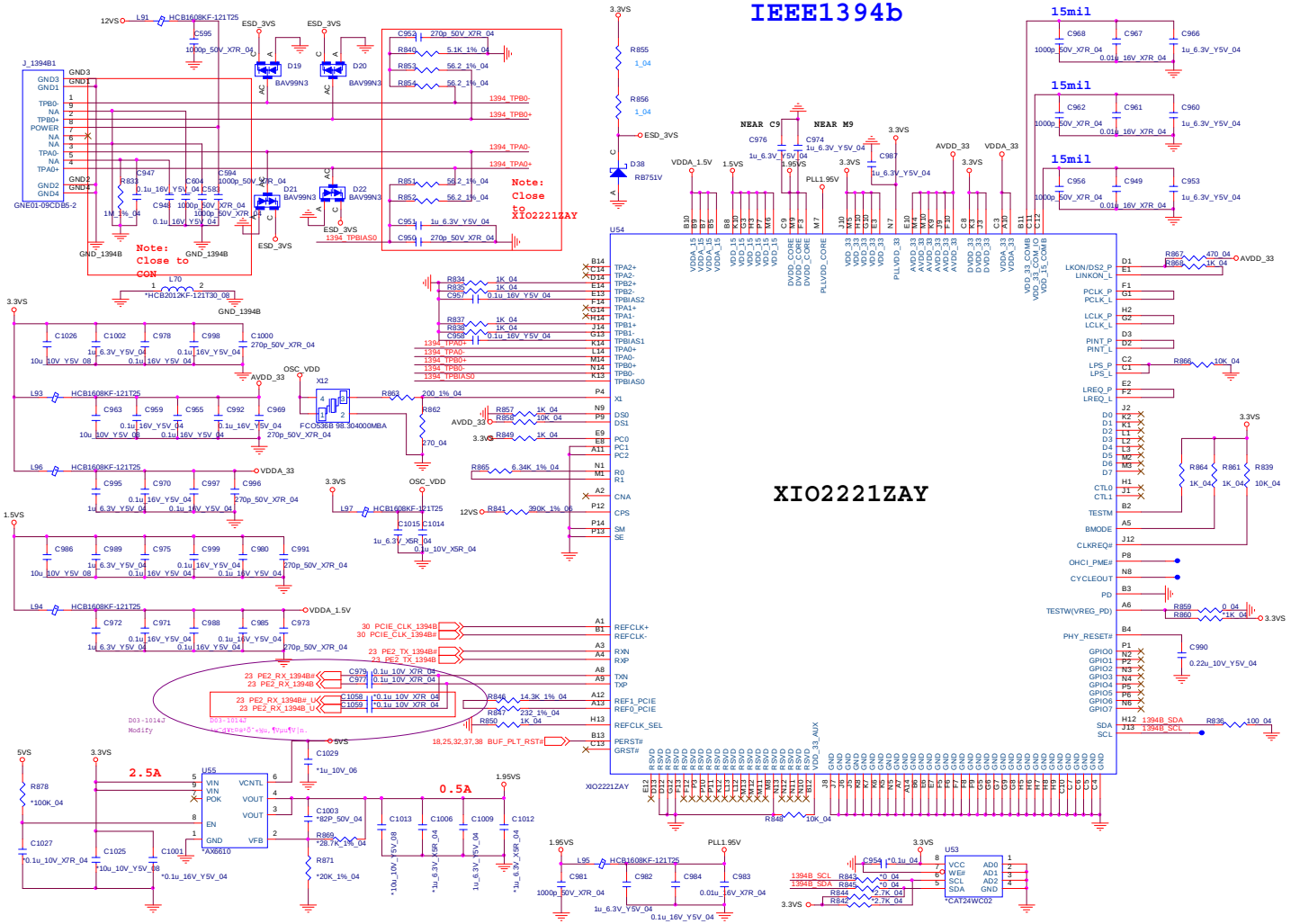
Sheet 39 of 63
Card Reader
JMB389


JMB389 A
MDIO0-5 *øµu®t<200 mil
SB GPIO Normal O/P keep Hi/Hi-Z Wake up 2ms pilse.
From ICH9M PinAE19(GPIO38).
MP version IC will provide card reader power by Pin17
20 mil
Card Reader Power
30 mil
meet falling time <1ms
SD Card Remove Fall time less than 1 ms when SD card remove.
25 Component.
Near Cardreader CONN
Layout note:
Very closed to pin 5
Layout note:
Very closed between pin 5 and pin 10
4 IN 1 SOCKET SD/MMC/MS/MS Pro
MDIO0-5 *øµu®t<200 mil

Chip Note:

1. All component must be closed to chip in this block.
2. C70 place close to pin5 (Trace width/length: 10mil/<100mil) , C69 close to C70 (Trace width/length: 20mil/<100mil).
3. C73 place close to pin10 (Trace width/length: 10mil/<100mil
4. Connect between Pin5 and Pin10 trace width/length: 20mil/<300mil
5. APREXT trace width/length: 10mil/< 250mil
6. C57 place close to pin18: 10mil/< 100mil for internal regulator usage

IEEE 1394


IEEE1394b
XIO2221ZAY
Note: Close to XIO2221ZAY
Note: Close to CON
15mil
15mil
15mil
NEAR C9
NEAR M9
2.5A
0.5A

POWER SYSTEM

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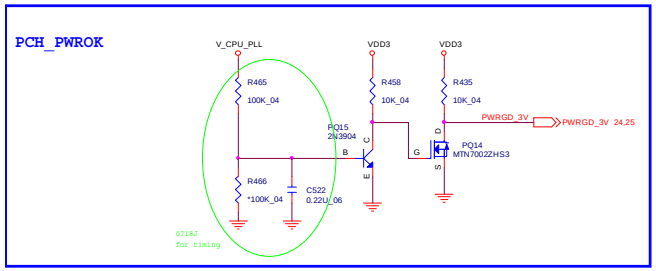
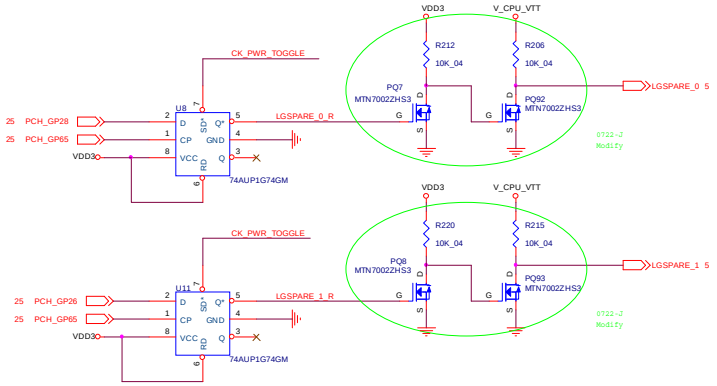
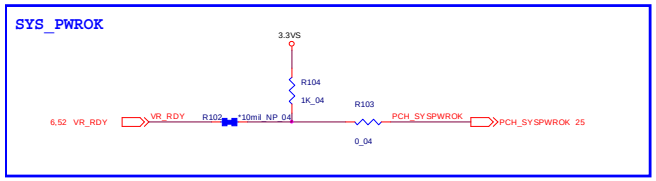
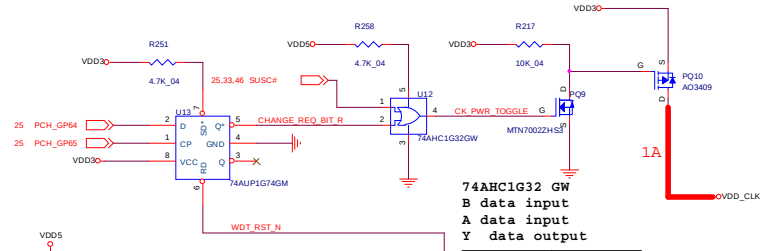
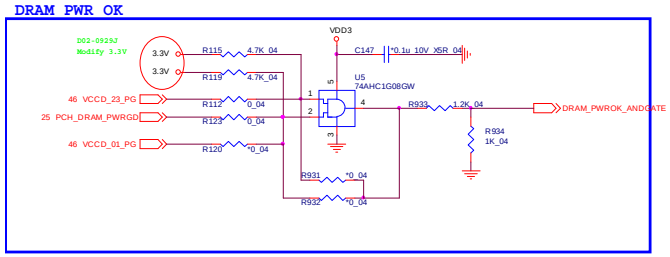
POWER SYSTEM











74AHC1G32 GW
B data input
A data input
Y data output

Input		Output
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	H

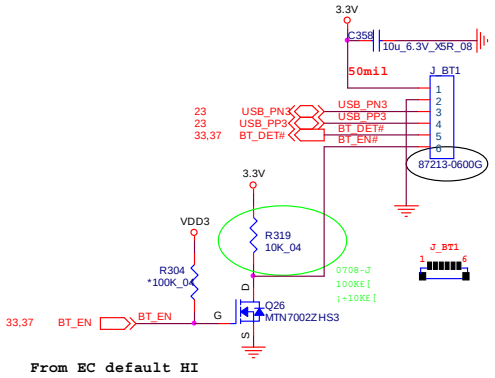
74AUP1G74GM

CP clock input
D data input
Q* complement output
Q true output
RD asynchronous reset input (active LOW)
SD asynchronous set input (active LOW)

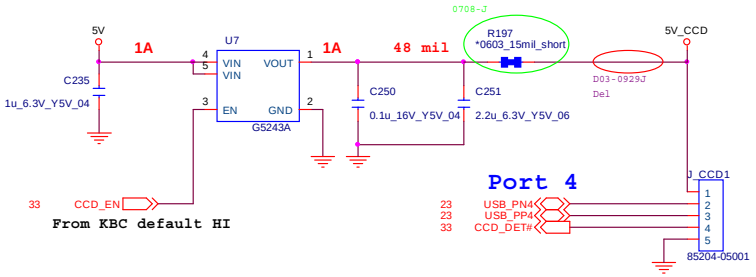
Input				Output	
SD	RD	CP	D	Qn+1	Qn*+1
H	H	¡ô	L	L	H
H	H	¡ô	H	H	L

BT, CCD

Bluetooth



CCD Saving PCB Spaces Solution



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BT, CCD

HDD, ODD

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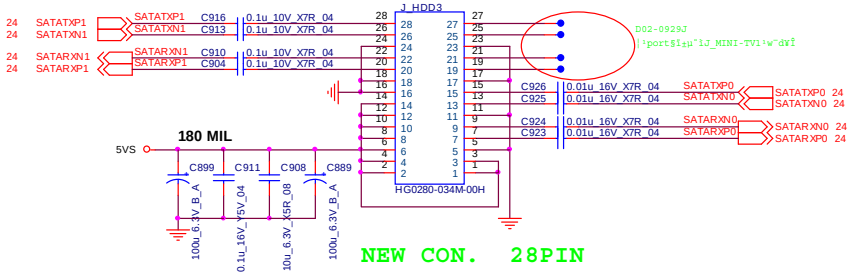
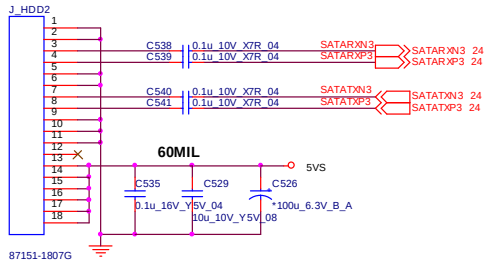
HDD, ODD

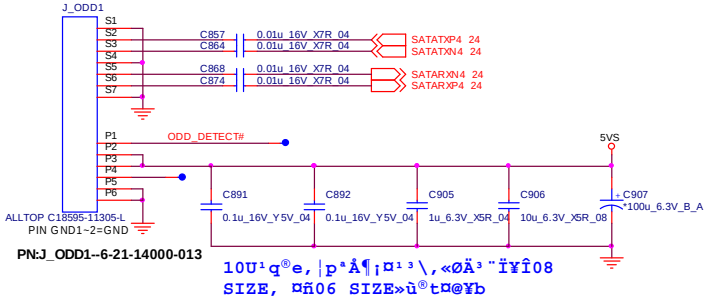
SATA HDD 1~3



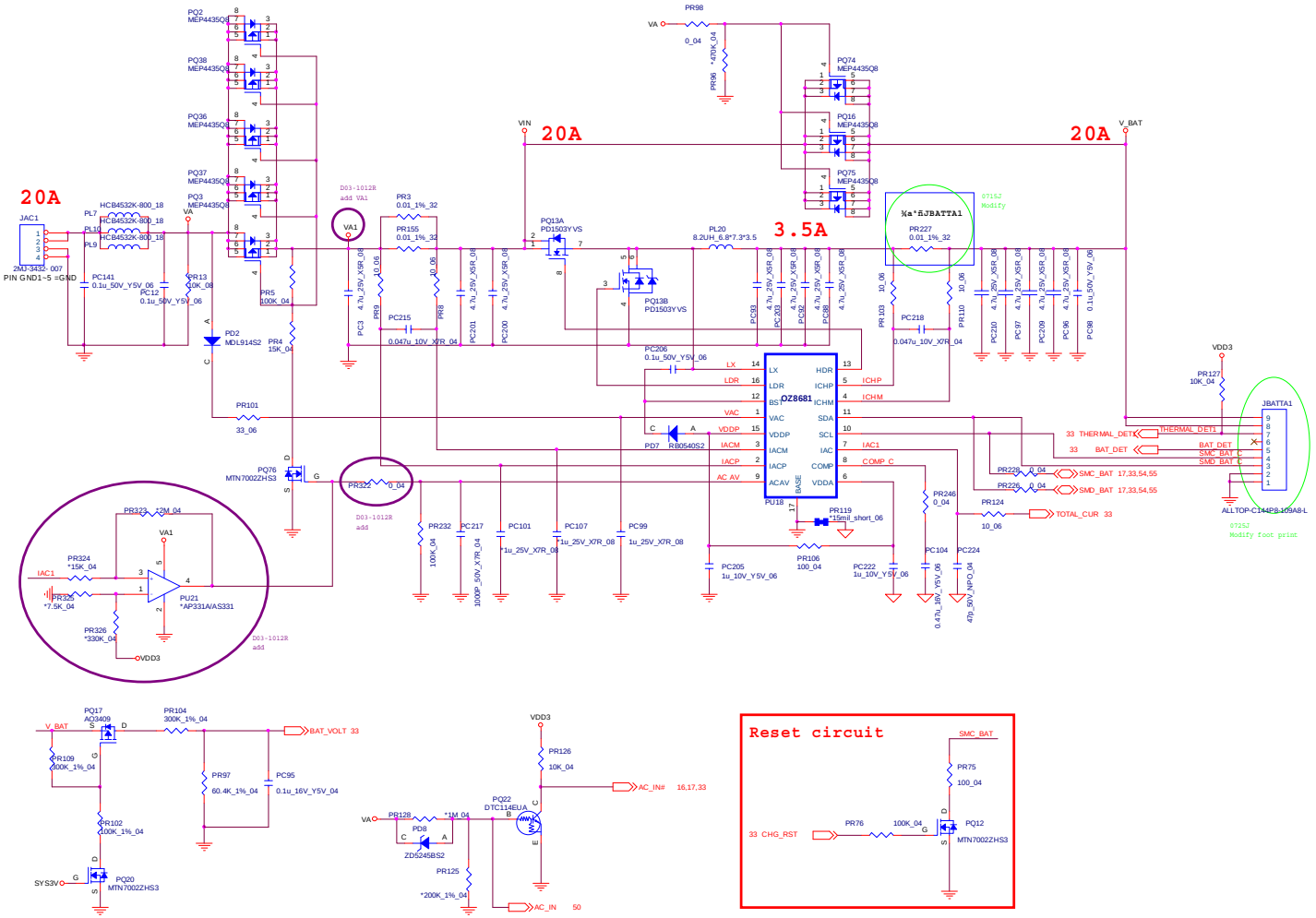
SATA HDD 4



SATA ODD



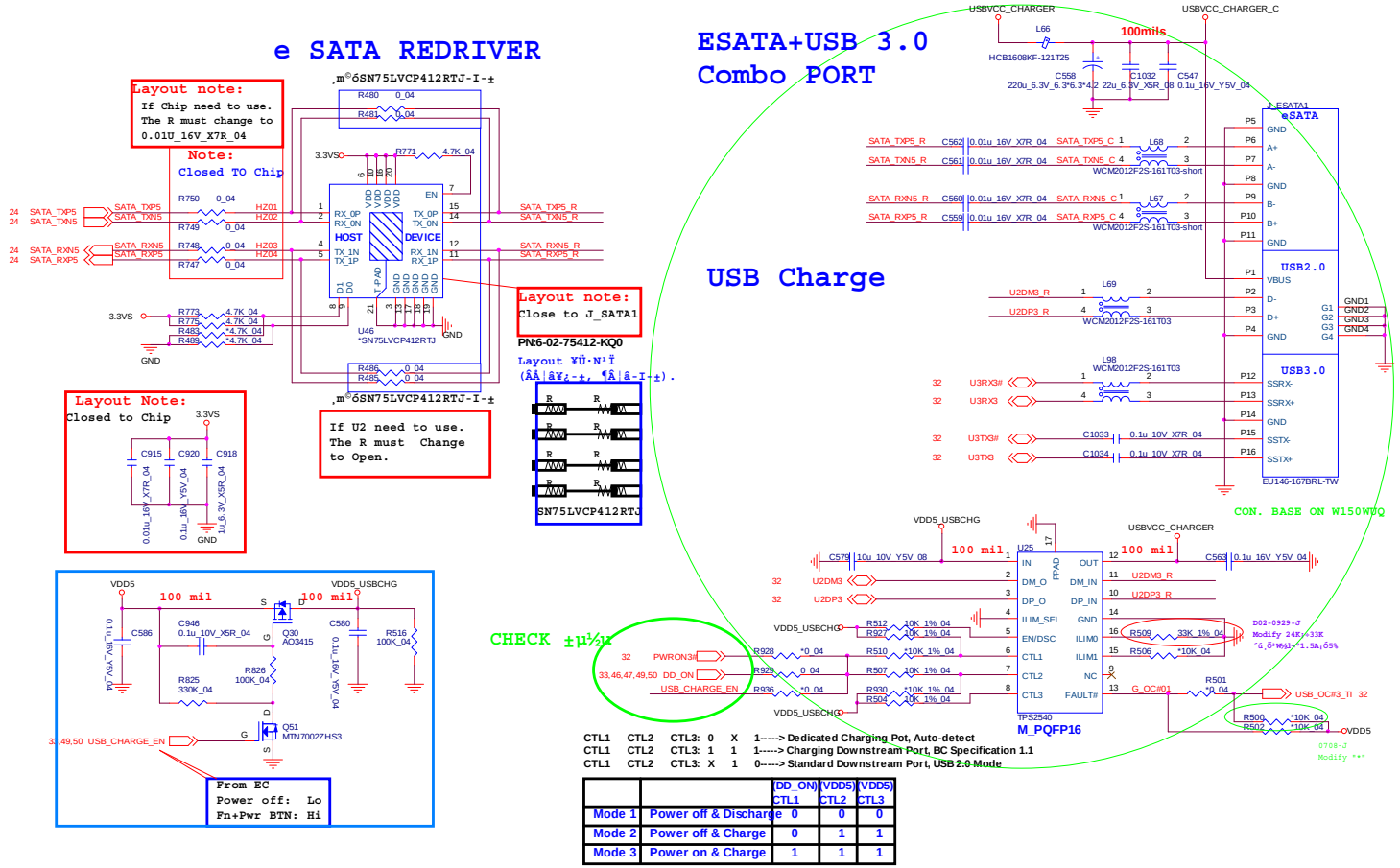
AC_IN, Charger



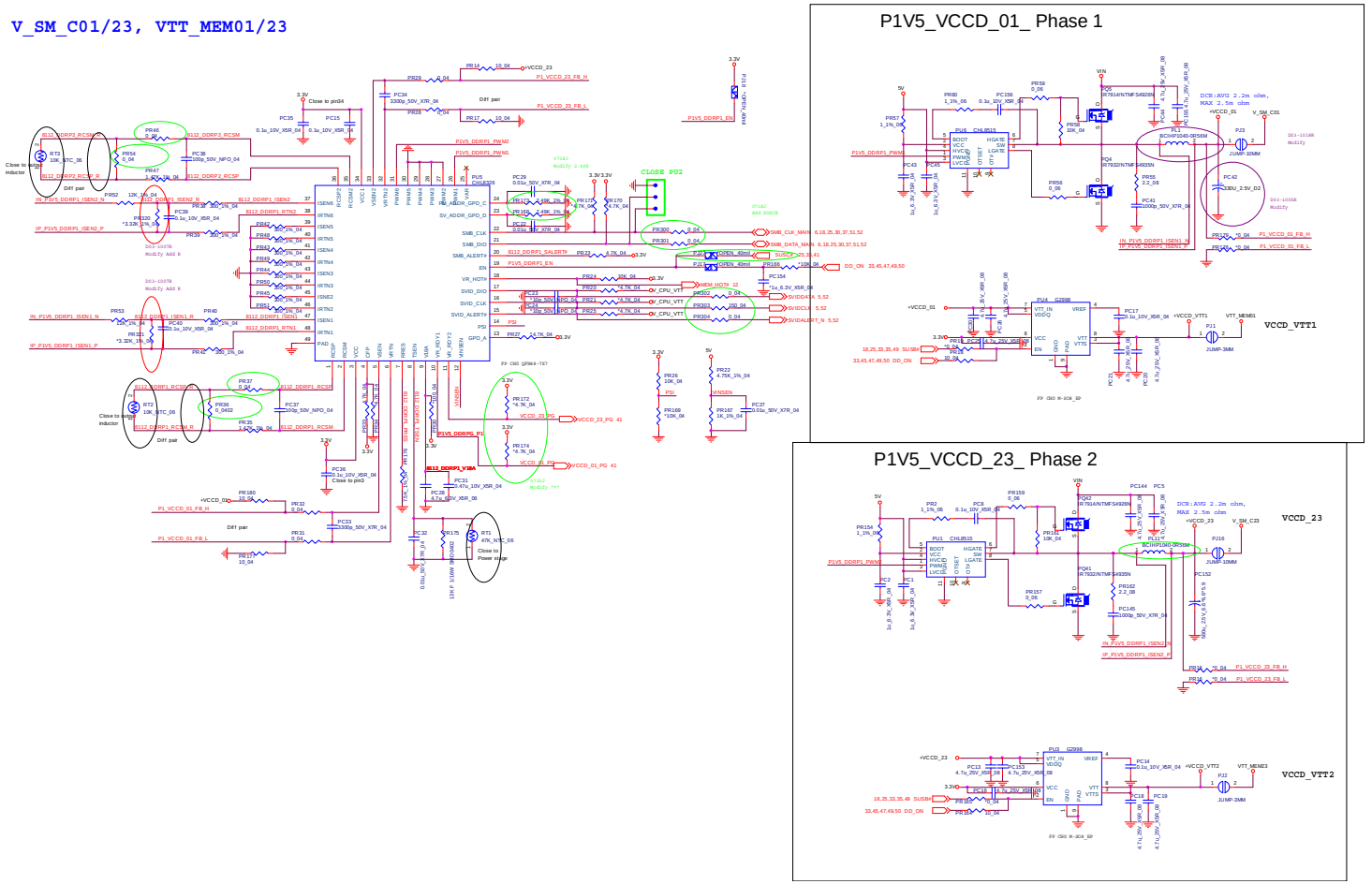
Sheet 44 of 63
AC_IN, Charger

eSATA+USB, USB Charge

Sheet 45 of 63
eSATA+USB,
USB Charge



Power V_SM, VTT MEM

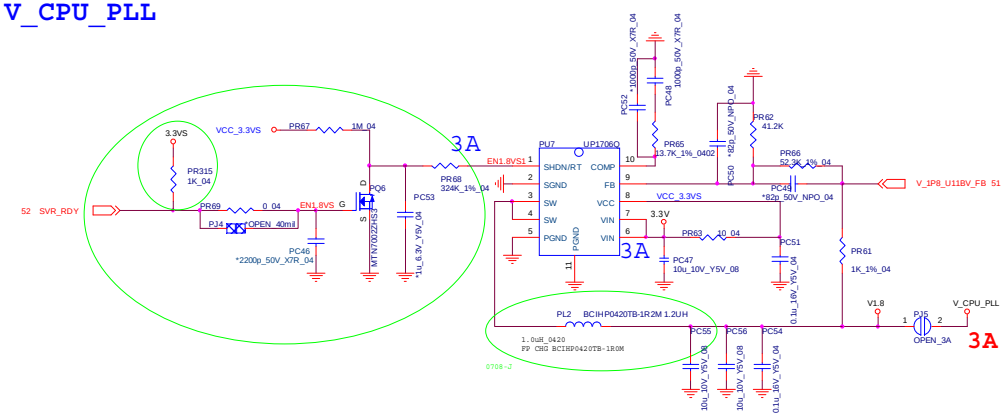


Sheet 46 of 63
Power V_SM, VTT MEM

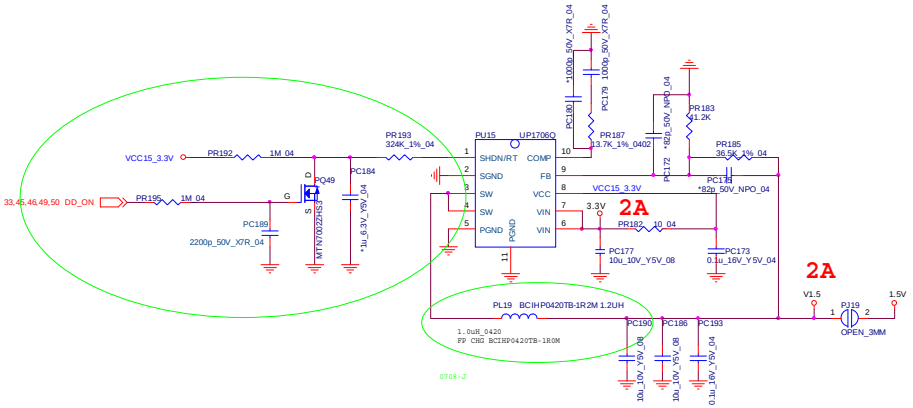
Power CPU_PLL, 1.05V

Sheet 47 of 63
Power CPU_PLL, 1.05V

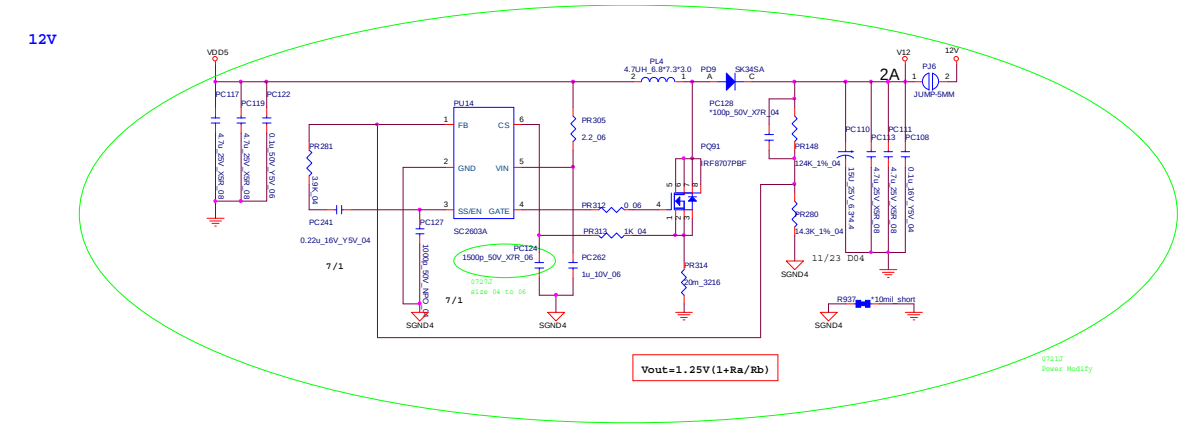
V_CPU_PLL



1.5V



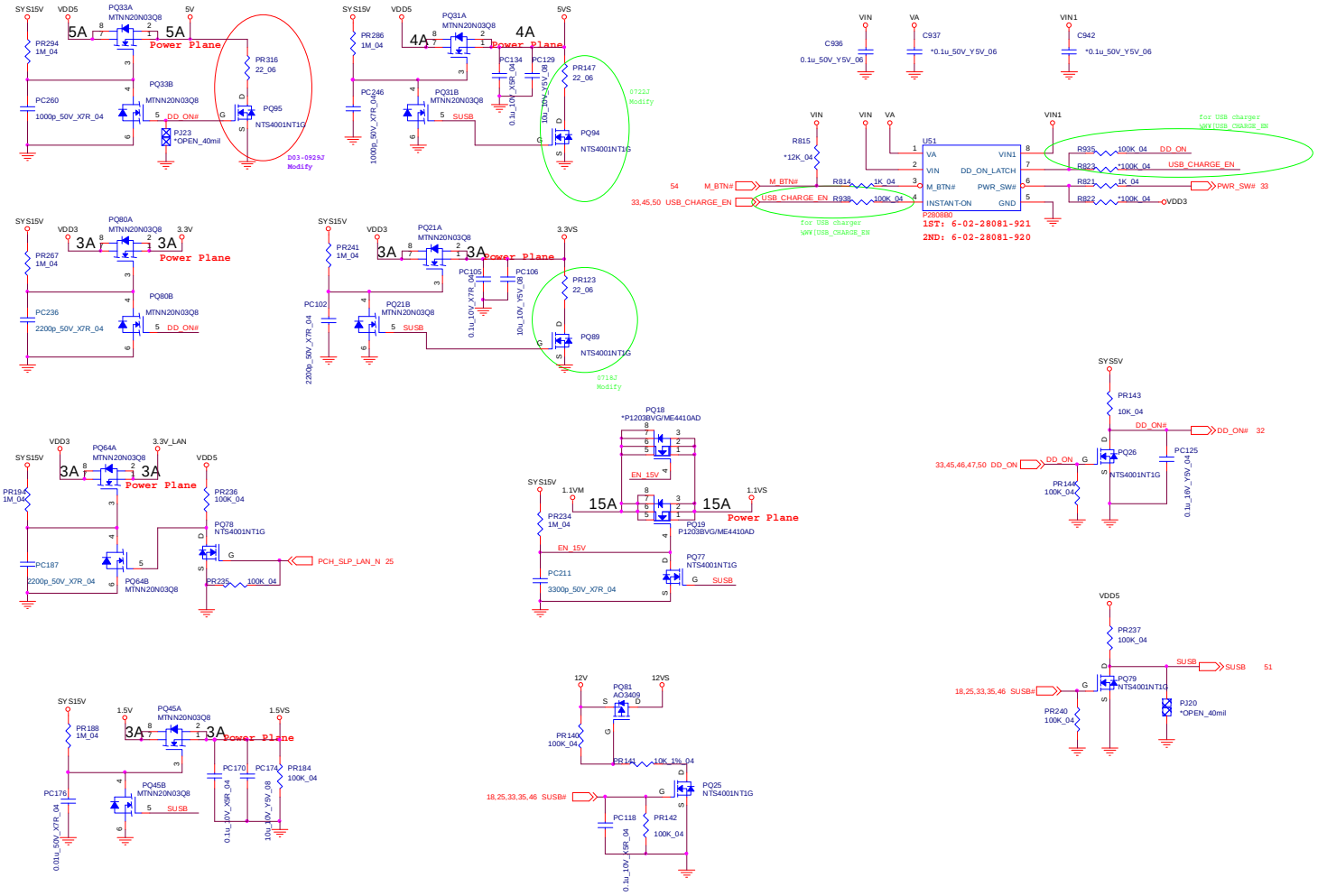
Power 12V, 1.1VM



Sheet 48 of 63
Power 12V, 1.1VM

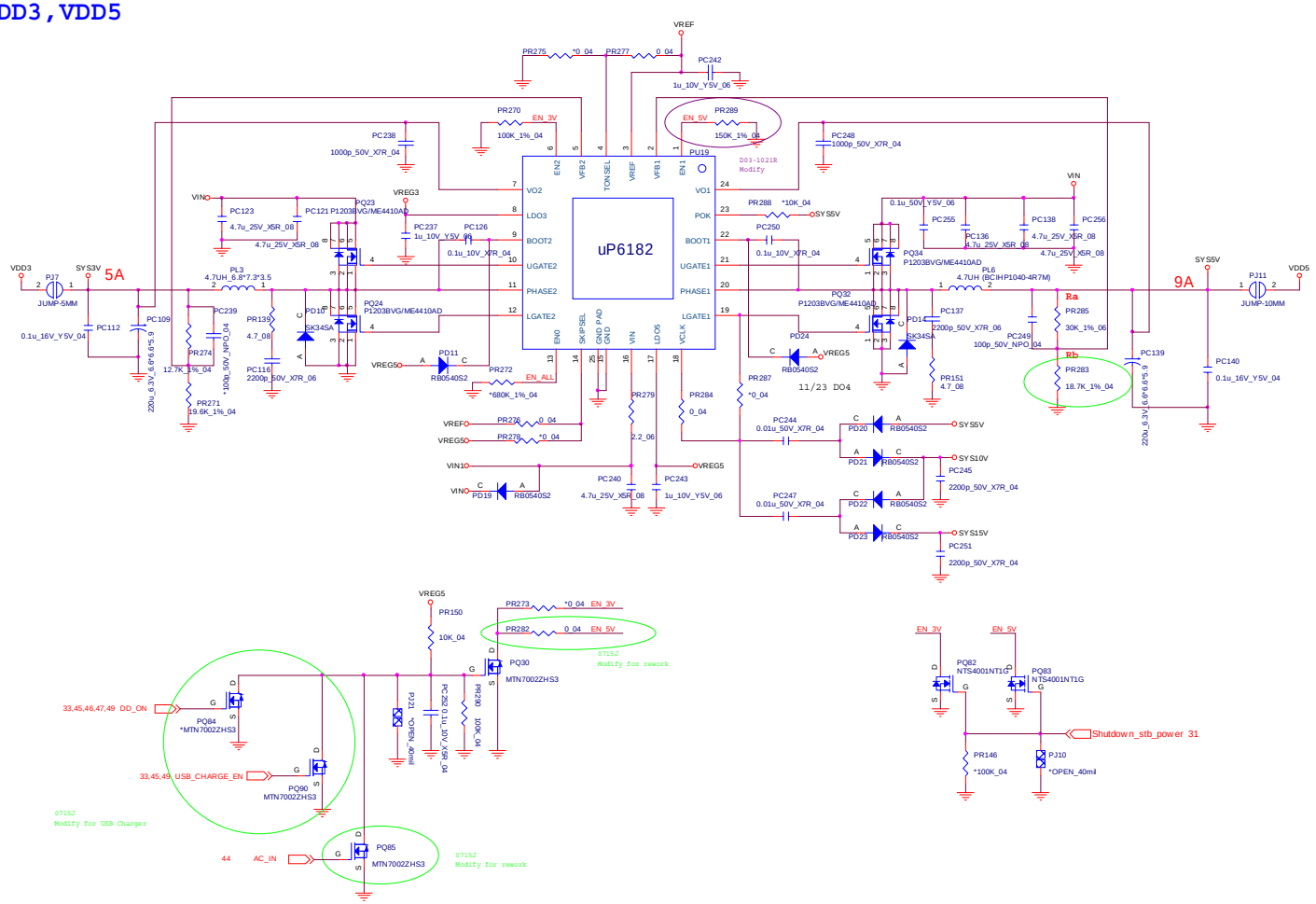
Power Switch

Sheet 49 of 63
Power Switch



Power VDD3/ VDD5

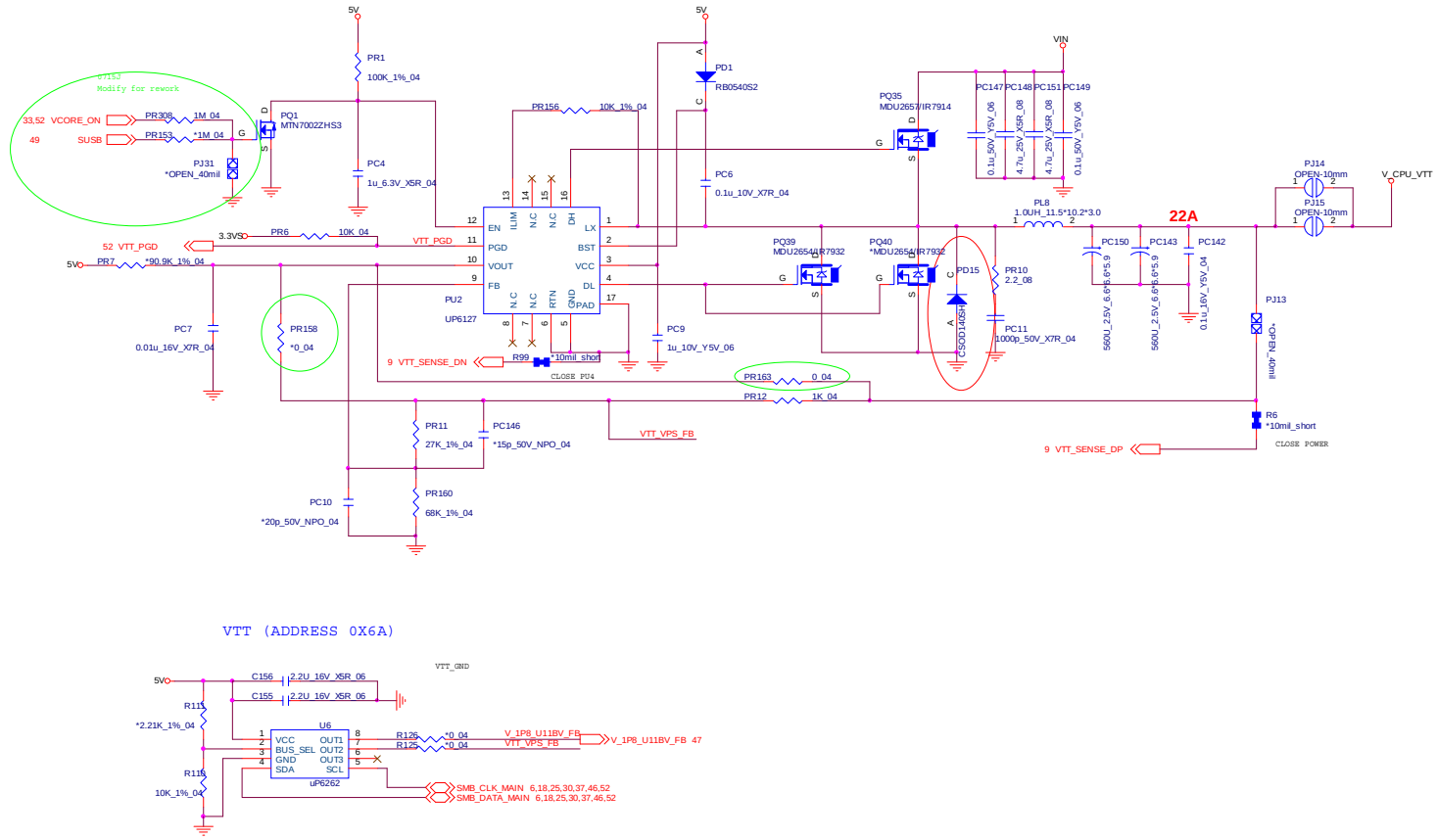
VDD3,VDD5



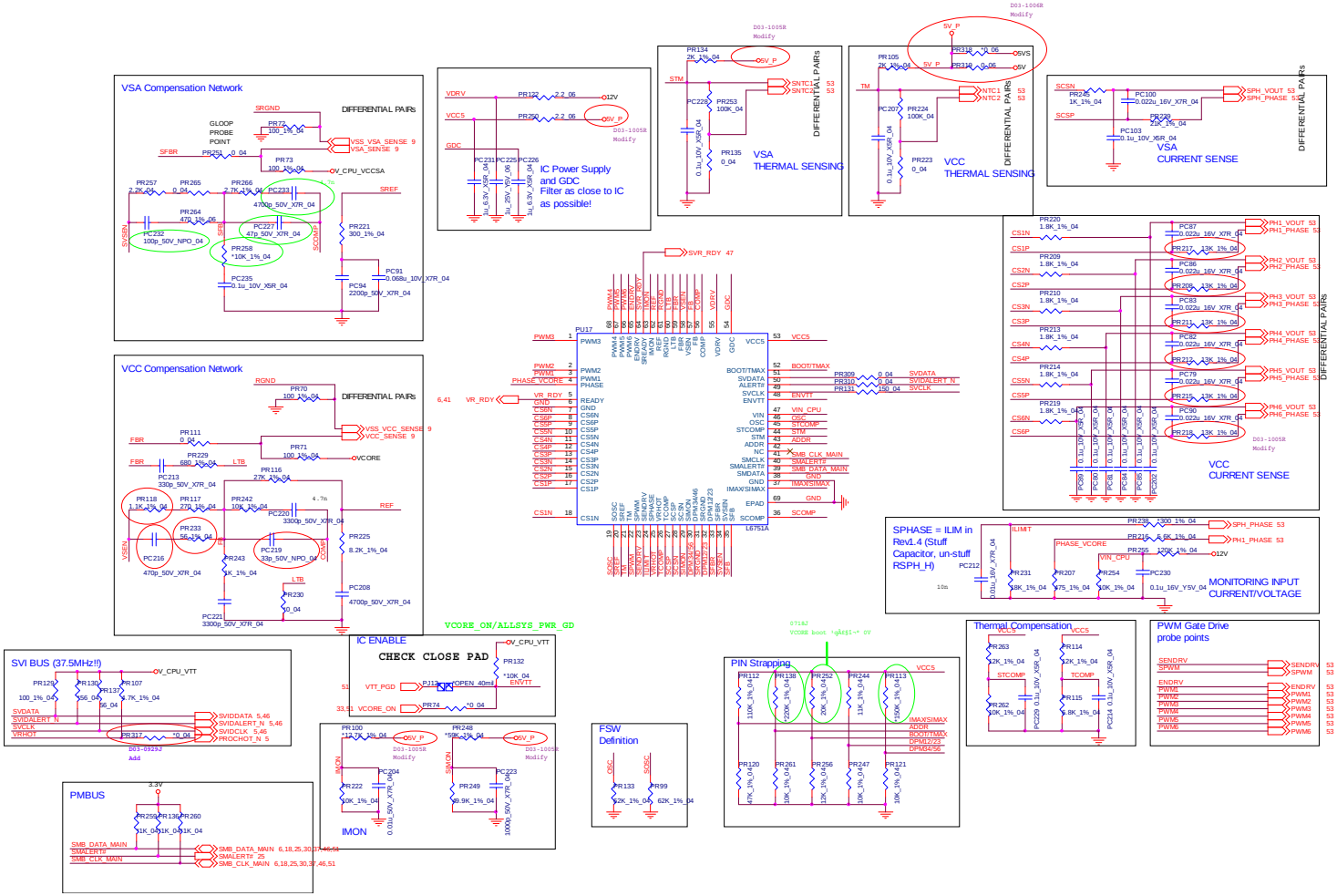
Sheet 50 of 63
Power VDD3/ VDD5

Power CPU_VTT

Sheet 51 of 63
Power CPU_VTT



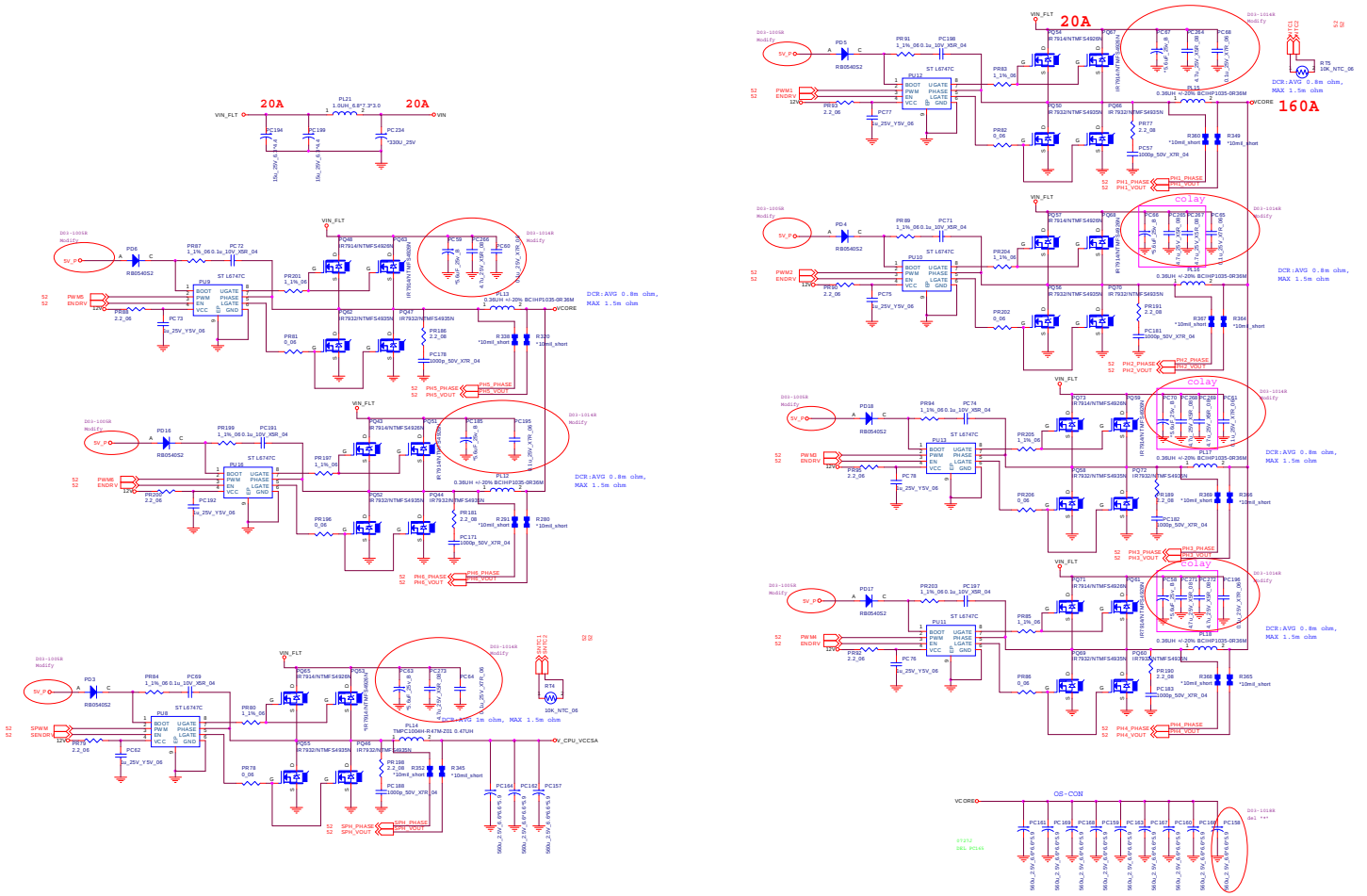
CPU1 L6751 Controller



Sheet 52 of 63
CPU1 L6751 Controller

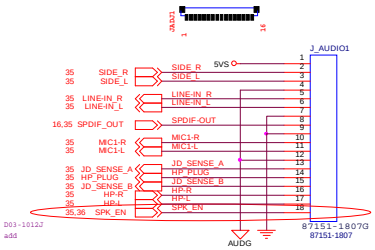
CPU2 Power Stage

Sheet 53 of 63
CPU2 Power Stage

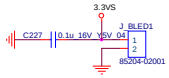


DAUGHTER CON

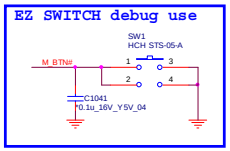
PHONE JACK BOARD



BLACK LED CON



EZ SWITCH debug use



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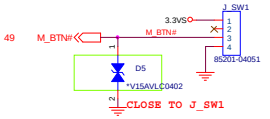
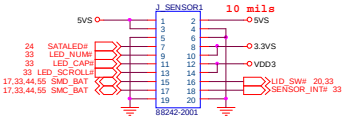
K/B light control Move page55

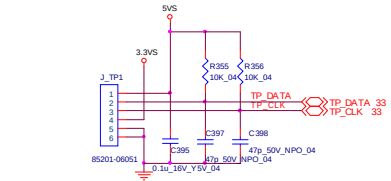
SWITCH BOARD



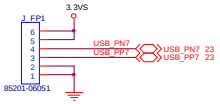
TOUCH SENSOR



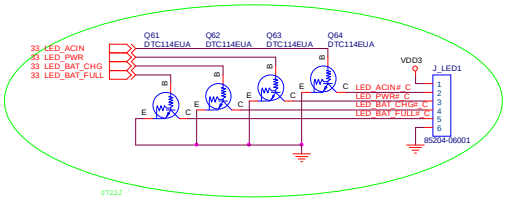
CLICK BOARD



FINGERPRINT



POWER LED BOARD



0722J
Modify

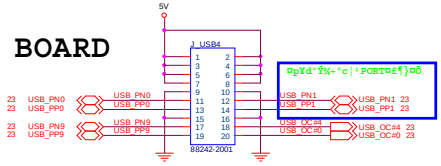
TV TUNER

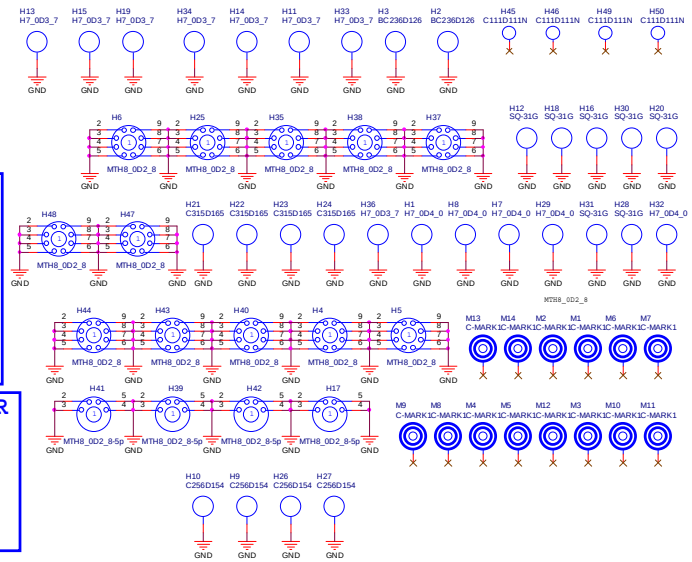
D03 Del

CONSUMER IR

D03 Del J_IR1

USB BOARD





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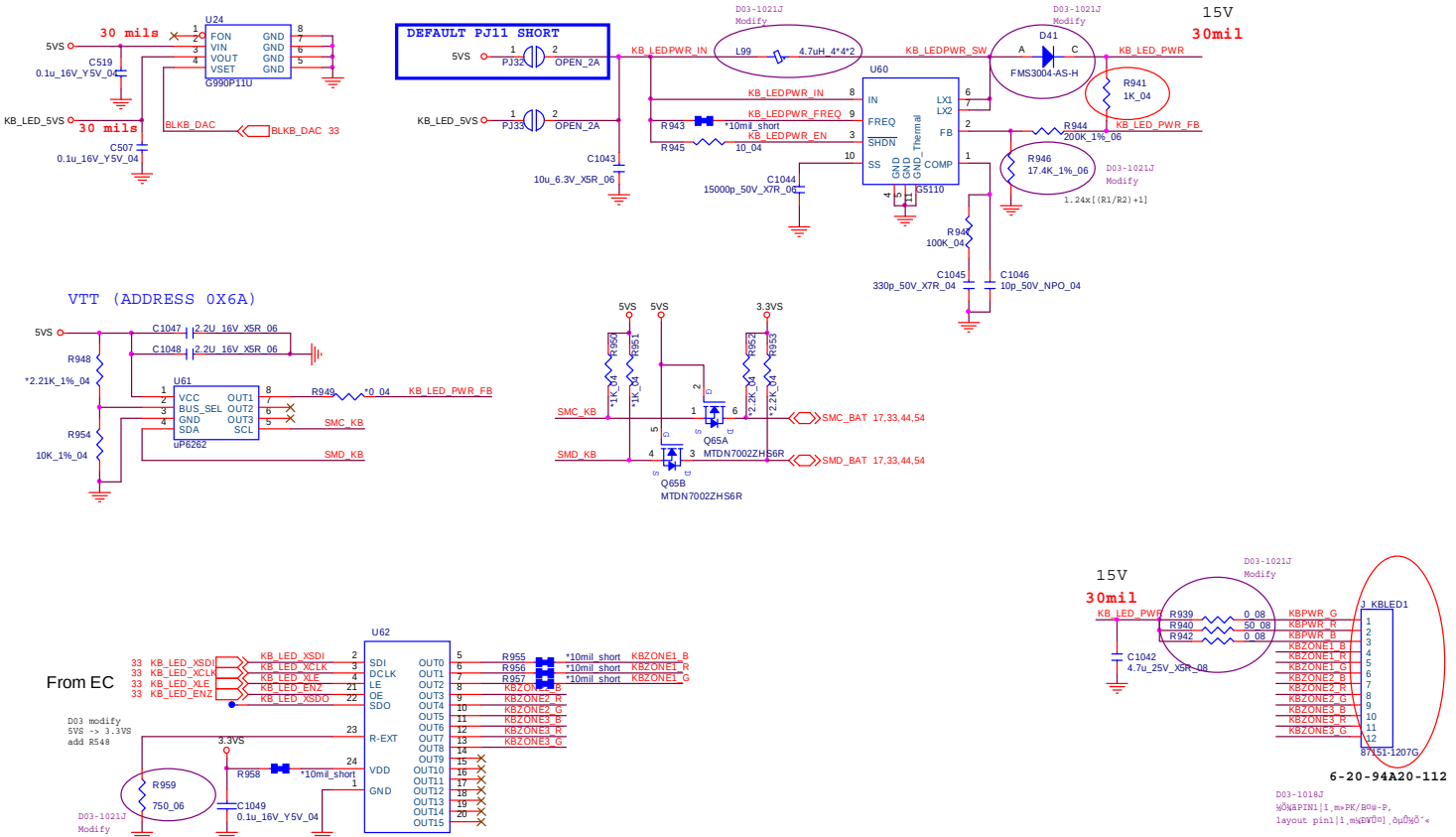
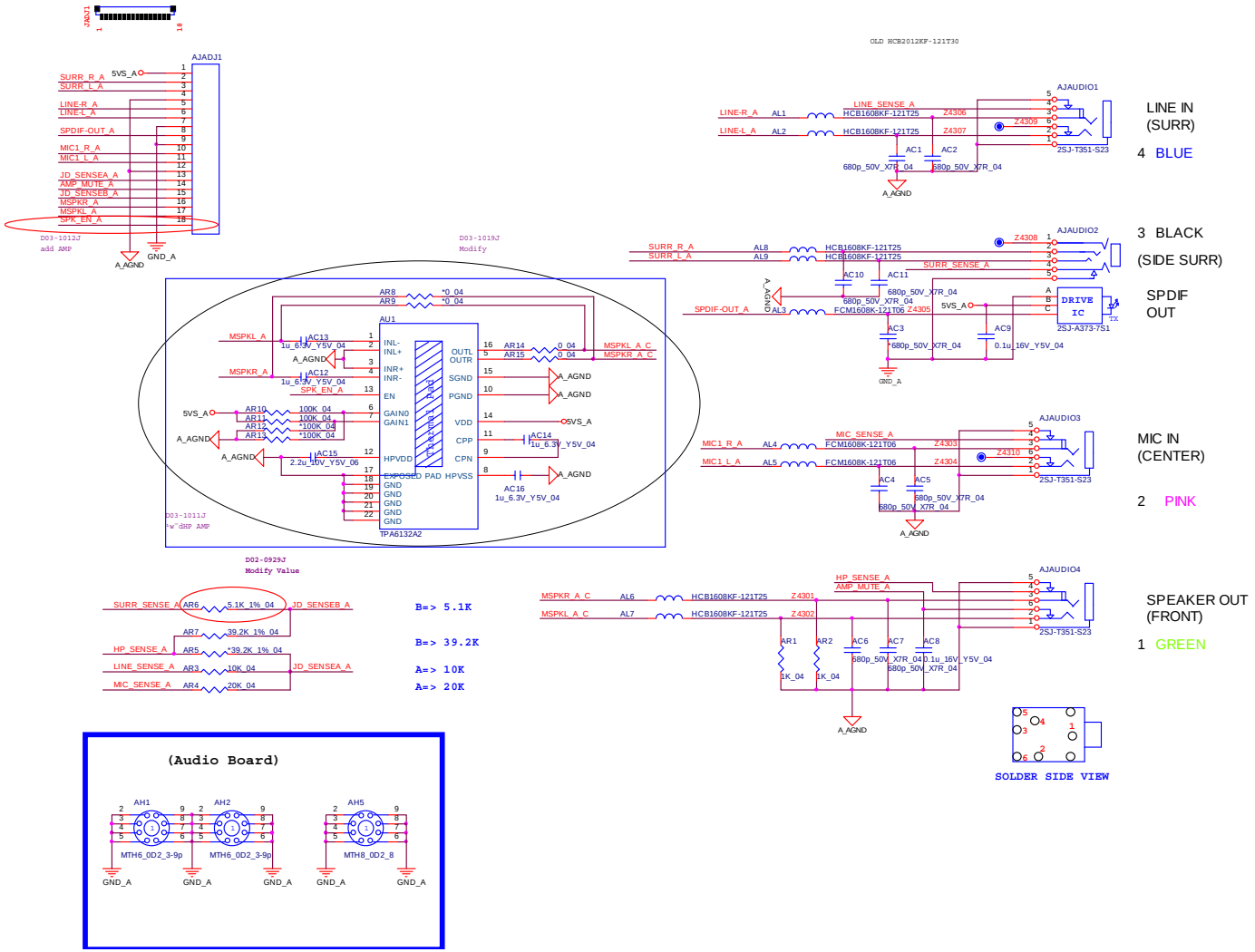
DAUGHTER CON

Backlight Keyboard

Sheet 55 of 63
Backlight
Keyboard



AUDIO BOARD



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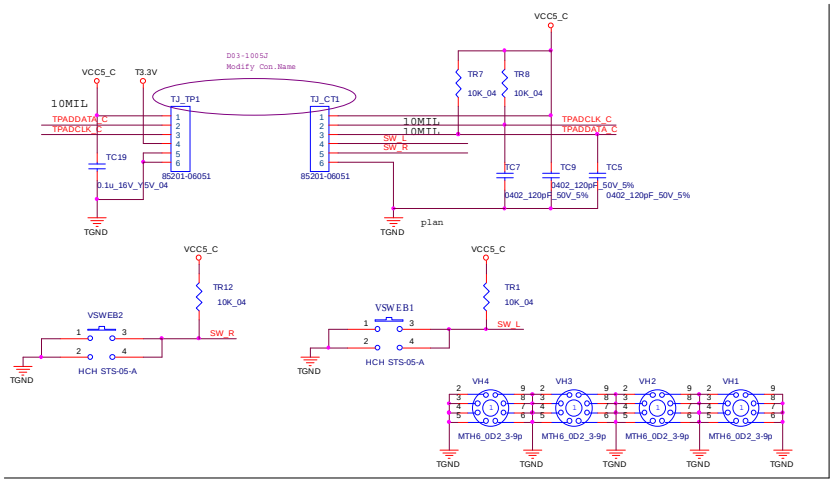
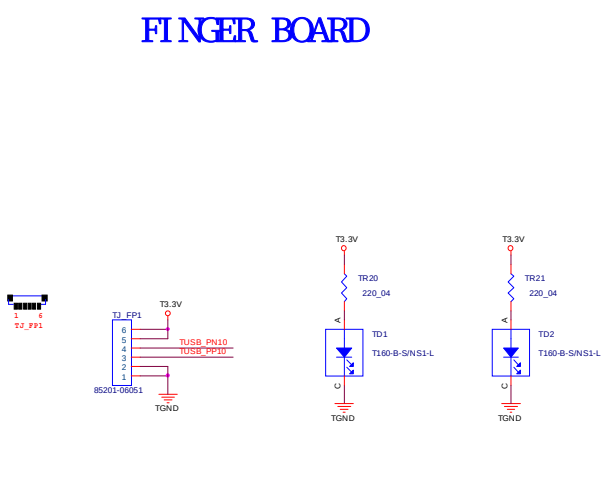
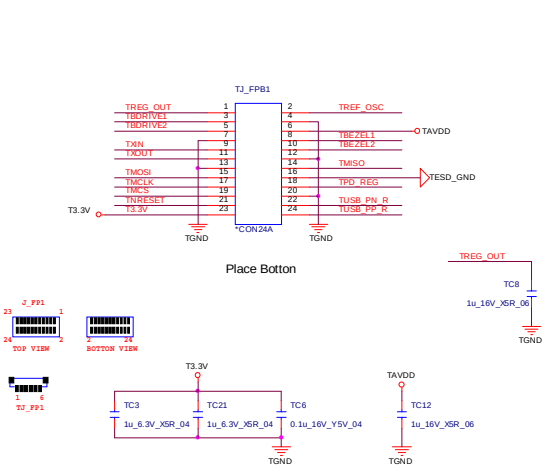
AUDIO BOARD

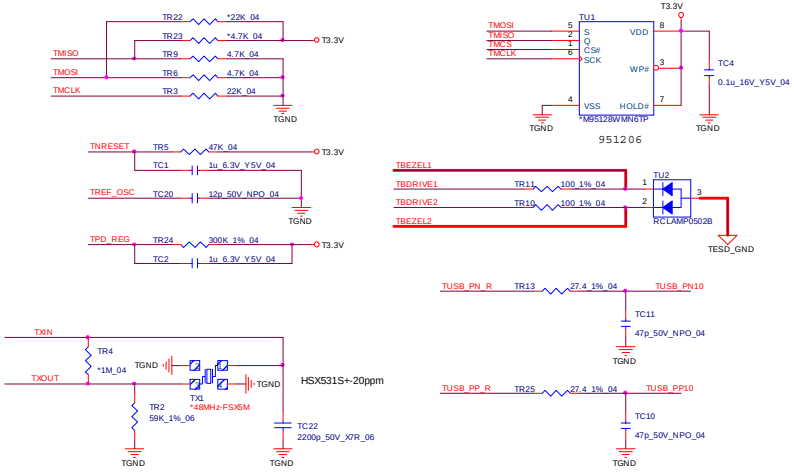
CLICK BOARD

Sheet 57 of 63
CLICK BOARD



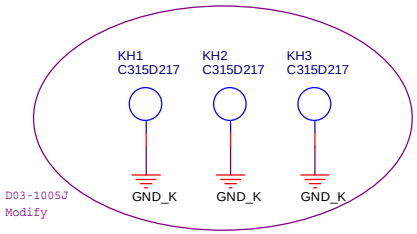






FINGER PRINT ¨ÏɣÎ·s®Æ,½u¸ô½ã-¶§ó·s

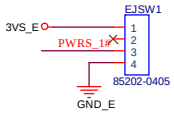
K/B CONVERTER BOARD

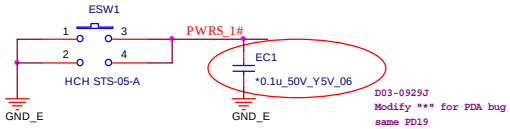


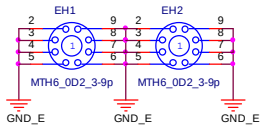
Sheet 58 of 63
K/B CONVERTER BOARD

SWITCH BOARD

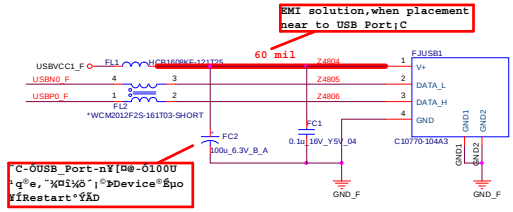
Sheet 59 of 63
SWITCH BOARD

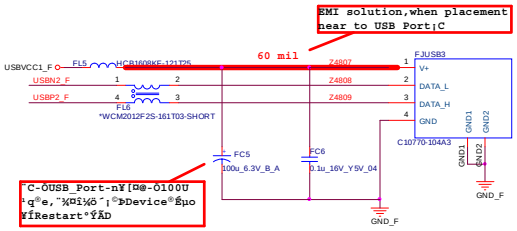




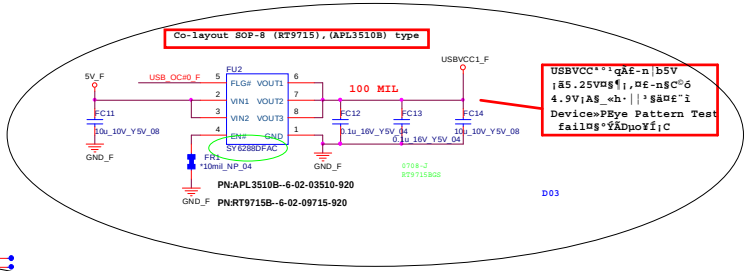


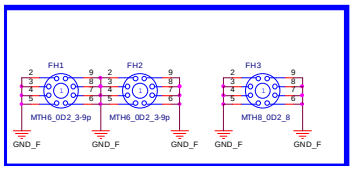
USB BOARD

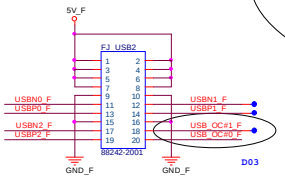




D03-0929J
Del USB PORT for ME design change







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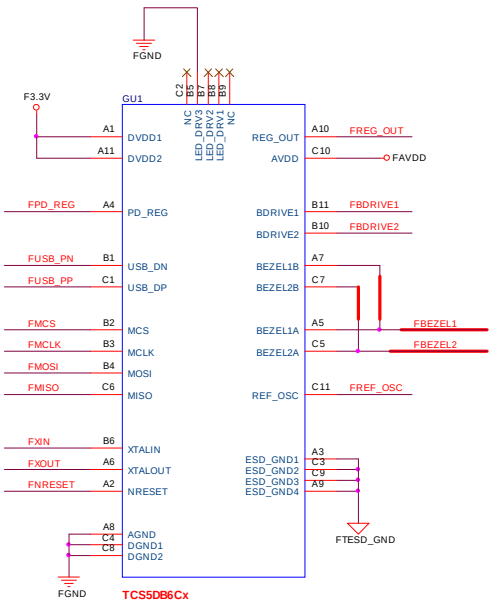
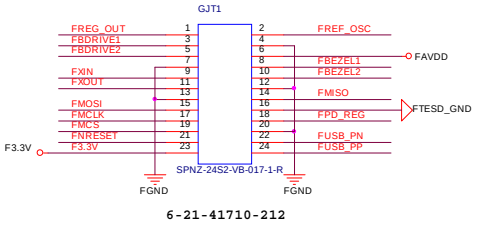
USB BOARD

FINGER SENSOR BOARD

Sheet 61 of 63
FINGER SENSOR BOARD

The TESD_GND trace has to be wide (> 20mil)
The path be marked in RED
needs to be design to be short and at low impedance.





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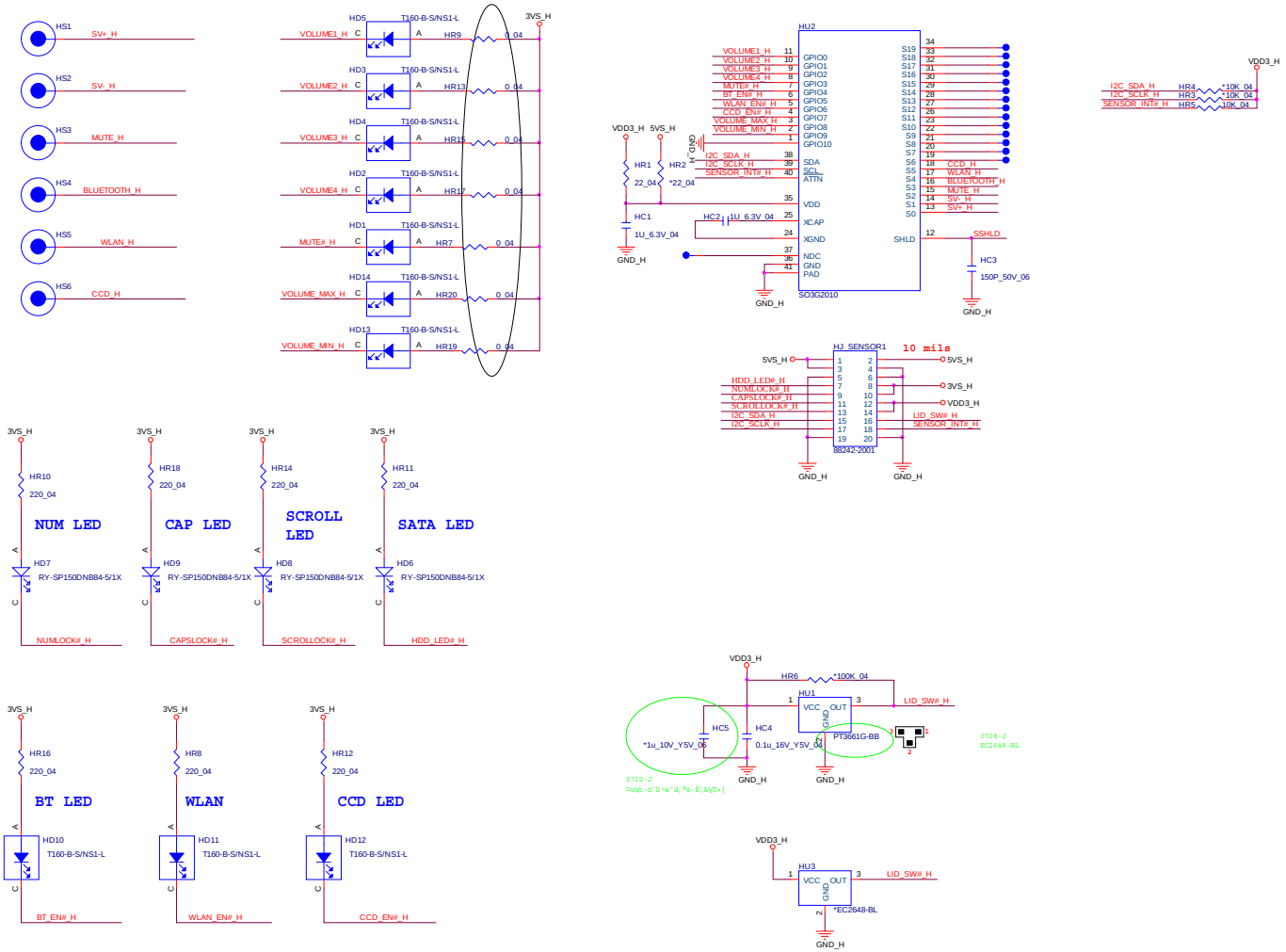
SAME W150ERQ FINGERPRINT BOARD
6-71-W15EF-D01

TOUCH SENSOR BOARD



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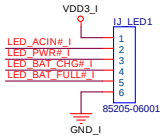
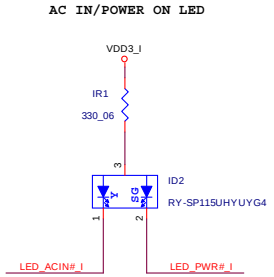
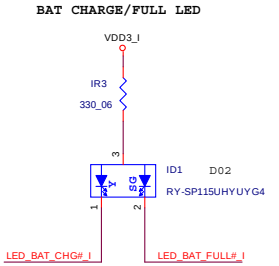
TOUCH SENSOR BOARD

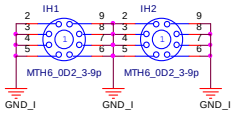
POWER LED BOARD

Sheet 63 of 63
POWER LED BOARD









Appendix C:Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS, you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to **www.clevo.com.tw** and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (**see sidebar for important information on BIOS versions**).

Unzip the downloaded files to a bootable CD/DVD or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the "+" and "-" keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are V1.01.XX or higher as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message "**Starting MS-DOS**". You will then be prompted to give "**Y**" or "**N**" responses to the programs being loaded by DOS. Choose "N" for any memory management programs.
2. You should now be at the DOS prompt e.g: DISK **C**:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

   C:\> Flash.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F3**) and select "**Yes**" to confirm the selection.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.